



CHARLES COUNTY  
MARYLAND   
Where Eagles Fly™

# ROAD ORDINANCE

Department of Planning & Growth Management

Adopted January 1985

Revised October 1992  
Revised January 1995  
Revised September 1998  
Revised December 2000  
Revised December 2002  
Revised November 2003  
Appendix Revised April 2008  
Appendix Revised April 2009  
Revised June 2011

## ***Our Vision***

*Charles County is a place where all people thrive and businesses grow and prosper;  
where the preservation of our heritage and environment is paramount;  
where government services to its citizens are provided at the highest level of excellence;  
and where the quality of life is the best in the nation.*

## ***Mission Statement***

*The Mission of Charles County Government is to provide our citizens the highest quality service possible in a timely, efficient, and courteous manner. To achieve this goal, our government must be operated in an open and accessible atmosphere, be based on comprehensive long- and short term-planning, and have an appropriate managerial organization tempered by fiscal responsibility.*

# ROAD ORDINANCE

## TABLE OF CONTENTS

| <b><u>Section</u></b> | <b><u>Subject</u></b>                                     | <b><u>Page</u></b> |
|-----------------------|---|--------------------|
| <b>I.</b>             | <b><u>SCOPE</u></b> .....                                 | <b>1</b>           |
| <b>II.</b>            | <b><u>DEFINITIONS</u></b> .....                           | <b>2</b>           |
| <b>III.</b>           | <b><u>MINIMUM DESIGN REQUIREMENTS</u></b> .....           | <b>4</b>           |
| <b>3.1</b>            | <b>Introduction</b>                                       |                    |
|                       | <b>A. General</b> .....                                   | <b>4</b>           |
|                       | <b>B. Continuity of Typical Section</b> .....             | <b>4</b>           |
| <b>3.2</b>            | <b>Design Controls</b>                                    |                    |
|                       | <b>A. Average Daily Traffic Volume (ADT)</b> .....        | <b>4</b>           |
|                       | <b>B. Design Speed</b> .....                              | <b>4</b>           |
|                       | <b>C. Design Vehicle</b> .....                            | <b>5</b>           |
| <b>3.3</b>            | <b>Horizontal and Vertical Alignment</b>                  |                    |
|                       | <b>A. Introduction</b> .....                              | <b>5</b>           |
|                       | <b>B. Horizontal Alignment</b> .....                      | <b>7</b>           |
|                       | <b>C. Horizontal Curves</b> .....                         | <b>8</b>           |
|                       | <b>D. General Controls for Horizontal Alignment</b> ..... | <b>9</b>           |
|                       | <b>E. Vertical Alignment</b> .....                        | <b>9</b>           |
|                       | <b>F. Grades</b> .....                                    | <b>10</b>          |
|                       | <b>G. Vertical Curves</b> .....                           | <b>10</b>          |
|                       | <b>H. General Controls for Vertical Alignment</b> .....   | <b>10</b>          |
| <b>3.4</b>            | <b>Cross Section Elements</b>                             |                    |
|                       | <b>A. Typical Sections</b> .....                          | <b>11</b>          |
|                       | <b>B. Pavement Widths and Cross-Slope</b> .....           | <b>12</b>          |
|                       | <b>C. Pavement Thickness</b> .....                        | <b>12</b>          |

| <b><u>Section</u></b> | <b><u>Subject</u></b>                       | <b><u>Page</u></b> |
|-----------------------|---|--------------------|
|                       | D. Curb and Gutter .....                    | 12                 |
|                       | E. Shoulders .....                          | 13                 |
|                       | F. Medians.....                             | 13                 |
|                       | G. Pedestrian Travel Ways .....             | 13                 |
|                       | H. Side Slopes .....                        | 15                 |
|                       | I. Guardrail .....                          | 15                 |
|                       | J. Utility Location.....                    | 15                 |
| <b>3.5</b>            | <b>Intersection Design</b>                  |                    |
|                       | A. Introduction.....                        | 15                 |
|                       | B. Geometric Design .....                   | 16                 |
|                       | C. Auxiliary Lanes/Turning Lanes .....      | 16                 |
|                       | D. Median Lanes and Openings.....           | 17                 |
|                       | E. Traffic Islands .....                    | 17                 |
|                       | F. Intersection Sight Distance.....         | 18                 |
|                       | G. Intersection Vertical Alignment .....    | 19                 |
|                       | H. Pedestrian Facilities .....              | 19                 |
|                       | I. Right-of-Way at Intersection .....       | 20                 |
|                       | J. Intersections with State Highways .....  | 20                 |
| <b>3.6</b>            | <b>Entrances .....</b>                      | <b>20</b>          |
| <b>3.7</b>            | <b>Off-Street Parking Lots.....</b>         | <b>20</b>          |
| <b>3.8</b>            | <b>Pavement Sections.....</b>               | <b>21</b>          |
| <b>3.9</b>            | <b>At Grade Crossing for Golf Cart.....</b> | <b>21</b>          |
| <b>3.10</b>           | <b>Roundabout .....</b>                     | <b>21</b>          |
| <b>3.11</b>           | <b>School Bus Turnaround .....</b>          | <b>21</b>          |
| <b>3.12</b>           | <b>Curb Openings .....</b>                  | <b>21</b>          |
| <b>3.13</b>           | <b>Access Management.....</b>               | <b>22</b>          |
|                       | A. Policy in General .....                  | 22                 |

| <b><u>Section</u></b> | <b><u>Subject</u></b>   | <b><u>Page</u></b> |
|-----------------------|---|--------------------|
|                       | B. Locating Median Openings and Access Points.....              | 22                 |
|                       | C. Addition to or Modification of Access Management Tables..... | 23                 |
| 3.14                  | Urban Roads.....  | 23                 |
| <b><u>IV.</u></b>     | <b><u>DRAINAGE</u></b>  |                    |
| 4.1                   | Storm Drainage.....   | 24                 |
| <b><u>V.</u></b>      | <b><u>PERMITS</u></b>   |                    |
| 5.1                   | Permits .....   | 25                 |
|                       | A. General Requirements.....                                    | 25                 |
|                       | B. Permit Application.....                                      | 25                 |
|                       | C. Right-of-Way .....   | 25                 |
|                       | D. Alternate Standards.....                                     | 25                 |
|                       | E. Permit Expiration .....                                      | 25                 |
| 5.2                   | Permits for Utilities.....                                      | 26                 |
|                       | A. Permission.....  | 26                 |
|                       | B. Emergency .....  | 26                 |
|                       | C. Restoration.....   | 26                 |
|                       | D. Processing .....   | 26                 |
|                       | E. Blanket Permits.....   | 26                 |
| 5.3.                  | Fees.....   | 26                 |
| 5.4                   | Bonds.....  | 27                 |
| 5.5                   | Road Plans .....  | 27                 |
| 5.6                   | Construction Requirements .....                                 | 28                 |
| 5.7                   | Variances/Exemptions .....                                      | 29                 |
| 5.8                   | Transitional Provisions.....                                    | 30                 |
| 5.9                   | Interpretation of Standards .....                               | 30                 |

| <b><u>Section</u></b> | <b><u>Subject</u></b>   | <b><u>Page</u></b> |
|-----------------------|---|--------------------|
| <b>5.10</b>           | <b>Inspection and Acceptance .....</b>                                      | <b>30</b>          |
| <b>5.11</b>           | <b>Approval and Acceptance .....</b>  | <b>31</b>          |
|                       | <b>A. Final Approval .....</b>  | <b>31</b>          |
|                       | <b>B. Acceptance .....</b>  | <b>31</b>          |
|                       | <b>C. Partial Acceptance .....</b>  | <b>31</b>          |
|                       | <b>D. As-Built Drawings .....</b>   | <b>31</b>          |
| <b>5.12</b>           | <b>Penalties .....</b>  | <b>31</b>          |
| <b><u>VI.</u></b>     | <b><u>TRAFFIC</u></b>   |                    |
| <b>6.1</b>            | <b>Introduction.....</b>  | <b>32</b>          |
| <b>6.2</b>            | <b>Traffic Signs and Pavement Markings .....</b>                            | <b>32</b>          |
| <b>6.3</b>            | <b>Railroad At-Grade Crossings .....</b>                                    | <b>33</b>          |
| <b>6.4</b>            | <b>Maintenance and Protection of Pedestrian and Vehicular Traffic .....</b> | <b>33</b>          |
| <b>6.5</b>            | <b>Streetlight Policy .....</b>   | <b>33</b>          |
| <b>6.6</b>            | <b>Privately Owned Structures.....</b>                                      | <b>33</b>          |
| <b>APPENDICES</b>     |   |                    |
| <b>A.</b>             | <b>Tables</b>   |                    |
| <b>2.01.01</b>        | <b>Summary of Design Criteria .....</b>                                     | <b>36</b>          |
| <b>2.01.02</b>        | <b>Summary of Design Criteria – Designated Urban Areas .....</b>            | <b>37</b>          |
| <b>2.02</b>           | <b>Stopping Sight Distance .....</b>  | <b>38</b>          |
| <b>2.03</b>           | <b>Minimum Intersection Spacing.....</b>                                    | <b>39</b>          |
| <b>2.04</b>           | <b>Minimum Lengths of Vertical Curves.....</b>                              | <b>40</b>          |
| <b>2.05</b>           | <b>Minimum Curvature for Turning Movements.....</b>                         | <b>41</b>          |
| <b>2.06</b>           | <b>Sight Distance at Intersection.....</b>                                  | <b>42</b>          |
| <b>2.07</b>           | <b>Pavement Detail.....</b>   | <b>43</b>          |

| <b><u>Section</u></b> | <b><u>Subject</u></b>   | <b><u>Page</u></b> |
|-----------------------|---|--------------------|
| 2.08                  | Tree Support Schedule.....  | 44                 |
| 2.09                  | Recommended List of Trees for Street Planting .....   | 45                 |
| 2.10                  | Minimum Passing Sight Distance .....  | 46                 |
| 2.11                  | Minimum Lengths of Auxiliary Lanes .....  | 48                 |
| B.                    | Guardrail Required for Embankment Geometry.....   | 49                 |
| C.                    | Standards and Guidelines for Traffic Signs and Markings in New<br>Subdivisions .....                          | 50                 |
| D.                    | Maintenance of Traffic.....   | 51                 |
| E.                    | Charles County Ordinance for the Naming and Renaming of Streets<br>and the Assignment of Address Numbers..... | 52                 |
| F.                    | Access Management Tables .....  | 58                 |
| G.                    | Urban Road Standards District.....  | 72                 |
| H.                    | References .....  | 73                 |

## **ARTICLE I - SCOPE**

This Ordinance shall apply to the design, construction, improvement, maintenance, and repair of roads within the unincorporated area of Charles County as required by the Subdivision Regulations and Zoning Ordinance.



## **ARTICLE II - DEFINITIONS**

### **For the purpose of these regulations, certain terms are defined as follows:**

**Alley:** A private roadway located in the Urban Road Standards District which provides secondary service access for vehicles to the rear or side of abutting properties. The naming of alleys shall end with “alley”.

**Collector Street:** A public roadway which, in addition to providing access to properties abutting thereon, is intended to collect traffic from, or distribute it to, a series of streets within a neighborhood or sub-neighborhood.

**County:** The term shall mean Charles County, Maryland a Body Corporate and Politic.

**County Highway Engineer:** The official designated by the County Commissioners to administer this Ordinance.

**Driveway:** A private access road, drive, or land to an individual lot or parcel which is contained within the lot or parcel and is not intended to serve any other lot or parcel of land.

**Easement:** A strip of land on which a limited right-of-way is provided for one or more designated purposes, without including title to the land.

**Entrance:** The area within the public right-of-way providing a vehicle connection to a private road, drive or driveway.

**Grid Address Numbering System:** The mathematical computation of mailing address hundred blocks based on Charles County map, scale 600 feet to the inch.

**Hiker/biker Path:** A pathway physically separated from motorized vehicular traffic by an open space or barrier and either within public right-of-way or within their own right-of-way.

**House Number:** The mailing address digital number and street name assigned to any structure or parcel of land.

**Local Roads:** A public roadway contained within a public right-of-way to provide direct access to abutting properties. The naming for local roads shall end with "court", "lane", "street", avenue, and "way". They are defined as follows:

**Court:** A public roadway that ends in a cul-de-sac contained within a public right-of-way to provide access to properties.

**Street/lane/avenue:** A public roadway that is not a court contained within a public right-of-way to provide access to properties.

**Way:** A public roadway contained within a public right-of-way consisting of a small

loop, or "horseshoe" with two access points with a maximum depth of three hundred (300) feet or a one-way "Eye Brow" configuration with a maximum depth of one hundred (100) feet to provide access to residential dwellings.

**Lot Frontage:** The distance for which the front boundary line of the lot and the street line are coincident.

**Natural Trail:** A hiker-biker path through or within Resource Protection Zone, the Chesapeake Bay Critical Area, or other environmentally sensitive areas.

**Parcel of Land:** Any lot, parcel, dock, pier, or wharf used to identify the site where a dwelling or place of business and/or storage is to be erected, located, or situated.

**Pedestrian Travel Way:** A travel way designed for exclusive use by pedestrians within public right-of-way or within their own right-of-way.

**Private Road:** Refers to non government maintained roadways. The naming of all private roads shall end with "place". The following are the various types of private roads:

**Private Drive:** A private driveway contained within a private easement/right-of-way to provide access to a maximum of five (5) single-family detached dwellings.

**Place:** A private road contained within an easement/right-of-way to provide access to multi-family dwelling units or a maximum of sixty-five single-family attached dwelling units.

**Property:** A building, structure, or parcel of land or the combination of any of the above.

**Public Road:** Refers to government maintained roadways.

**Public Utility:** A business or service which is engaged in regularly supplying a commodity or service of public need such as electricity, gas, water, sewer, and telephone.

**Public Right-of-way:** Grants fee simple title for continuous access through, over, under, and across property.

**Street Direction:** The direction any street or road travels the longest in distance.

**MSHA:** Shall mean the Maryland State Highway Administration.

**Urban Road:** A public road located in the Urban Road Standards District. A map of the urban road standards district is shown in appendix G.

## **ARTICLE III - MINIMUM DESIGN REQUIREMENTS**

### **3.1 INTRODUCTION**

#### **A. General**

This chapter presents criteria and guidelines for the design of roads, streets, driveways, and off-street parking lots. The criteria and guidelines have been developed considering the intended role of the street in relation to service function, land use, traffic demand, quality of service, vehicular and pedestrian safety, economy, and the environment.

Tables 2.01.01 and 2.01.02 give a summary of the basic design criteria which are developed in this chapter.

#### **B. Continuity of Typical Section**

When a road is constructed in segments at various times or traverses varying zoning districts, the County may require certain design features (e.g. curb type, paving width, etc.) not otherwise required by this manual or may waive these design features in order to provide continuity of the typical section.

### **3.2 DESIGN CONTROLS**

The three principal values controlling design of roads and streets are average daily traffic volume (ADT), design speed, and design vehicle. These values form the basis for the selection of the geometric elements that are required to accommodate the anticipated traffic at a desired quality of service.

#### **A. Average Daily Traffic Volume (ADT)**

Average daily traffic volume will be the design control as shown in Article VII, Section 72 - Functional Classification of Roads, of the Charles County Subdivision Regulations. In cases of lower classification of streets, trip generation rates may be used in lieu of average daily traffic.

#### **B. Design Speed**

Design speed is the maximum safe speed that can be maintained over a given section of road when the traffic volume is so low that the geometrics of the roadway control speed. All elements should be in balance consistent with a specified design speed. Stopping sight distance, horizontal and vertical alignment, and superelevation are among the roadway elements which are controlled by design speed. The minimum design values for the various elements required for a given design speed should be used only where controls such as topography and property damages dictate their use. However, on local residential streets it is desirable to keep speeds low, and care must be exercised that the

design does not encourage high speeds without sacrificing any of the design standards included herein.

Unless otherwise approved by the County, the minimum design speeds listed in tables 2.01.01 and 2.01.02 shall be used for the design of roads. For existing County roads whose classification is unknown the design speed shall be the posted speed plus 10 mph.

**C. Design Vehicle**

The design vehicle is the motor vehicle whose characteristics determine such geometric elements as vertical clearance and turning radii. Vehicles have been divided into six classes and a typical design vehicle has been developed for each. The respective design vehicles have dimensions and a minimum turning radius larger than those of almost all vehicles in the respective classes.

The six design vehicle designations are as follows:

|              |  |
|--------------|--|
| <b>P</b>     | (Passenger car)                          |
| <b>SU</b>    | (Single unit truck)                      |
| <b>BUS</b>   | (Single unit bus)                        |
| <b>WB-40</b> | (Semitrailer combination, intermediate)  |
| <b>WB-50</b> | (Semitrailer combination, large)         |
| <b>WB-60</b> | (Semitrailer - full trailer combination) |

Dimensions and turning characteristics of each design vehicle are contained in Reference 1.

Though a road must be designed to accommodate the largest vehicle likely to use it, the selection of too large a design vehicle can have an adverse effect, such as longer crosswalks at the intersections. The design vehicle must be selected considering the street classification and adjacent land uses. Its selection is subject to review and approval by the County.

In no case shall a public road, private road or commercial/industrial entrance be so designed that it cannot accommodate a WB-40 vehicle and a fire truck with an inside turning radius of 35.5' and an outside turning radius of 46' and an overhang of 2.5'.

**3.3 HORIZONTAL AND VERTICAL ALIGNMENT**

**A. Introduction**

**1. General**

All roads should be designed to take full advantage of the existing topography and offer scenic views wherever possible.

The horizontal and vertical alignment should be designed together to assure a smooth continuous route. Design procedures which include the careful coordination of the vertical and horizontal alignment will result in a safer, more aesthetic and more economical design. The horizontal curve should be longer than the vertical curve at a given location so that the driver can easily perceive changes in horizontal alignment. Sharp horizontal curves should be avoided at the bottom of long steep grades because vehicular speeds may be high, making it difficult to travel on the curve, especially under slippery conditions.

The design for both horizontal and vertical alignment should be such that no unexpected features are presented to the driver. A sharp horizontal curve should not be introduced after a long stretch of tangents and flat curves; rather, the curves should become progressively sharper to accustom the driver to the larger centrifugal forces.

## 2. Sight Distance

Sight distance is the length of visible roadway ahead of the driver. The two types of sight distance considered in design are stopping (or non-passing) sight distance and passing sight distance. Sight distance shall be made as long as feasible, but never less than the stopping sight distance.

The sight distance required at intersections is presented in Section 3.5.F.

## 3. Stopping Sight Distance

Stopping sight distance (SSD) is the distance required for a vehicle to stop before reaching an object in its path. It is the sum of the distance traveled from the moment the object is first visible to the driver to the moment the brakes are applied, and the distance required to stop after the brakes are applied.

The equation for stopping sight distance is:

$$SSD = 3.67 V + \frac{V^2}{30 (F \pm G)}$$

where:       $V$  = initial speed, mph  
               $F$  = coefficient of friction between tires and roadways for wet pavement  
               $G$  = percent of algebraic grade divided by 100

Stopping sight distances on a level roadway for various design speeds are shown in Table 2.02.

Stopping sight distance is measured between an eye height of 3.5 feet and an object height of 6 inches.

The relationships between horizontal curvature and sight distance, and vertical curvature and sight distance, are given in Sections 3.3.C.3 and 3.3.G respectively.

#### **4. Passing Sight Distance**

Passing Sight Distance (PSD) is the distance required for a vehicle to pass another before meeting an opposing vehicle which might appear after the pass began. It is applicable only to two-lane, two-way rural major collectors, and minor arterials.

Passing sight distance is measured between an eye height of 3.5 feet and an object height of 4.25 feet.

The minimum passing sight distance should be provided at least once per mile.

Table 2.10 contains minimum passing sight distances for various design speeds.

### **B. Horizontal Alignment**

#### **1. Intersection Location and Spacing**

Roads should be so located that sufficient length is provided between intersections for weaving, storage, and associated land uses. The minimum intersection spacing, measured along the through roadway between the centerline of intersecting roadways, shall be as indicated in Table 2.03.

#### **2. Cul-De-Sac Streets and Turnarounds**

The design of single access streets such as cul-de-sacs shall be as specified in tables 2.01.01 and 2.01.02. Streets which are permanently designed with only one end open to traffic shall be terminated in a cul-de-sac as shown in the Charles County Standard Detail Manual. In the event a street will be extended in the future under a planned project for which a preliminary plan has been approved, a temporary "T" turnaround shall be provided as shown in the Charles County Standard Detail Manual R/2.19.

**C. Horizontal Curves****1. General**

Horizontal curves are used to change direction at a safe rate and shall be used wherever the roadway centerlines change direction.

Reverse curves and compound curves are a combination of simple curves and criteria governing their use are included in Section 3.3.D.

**2. Degree of Curve, Superelevation, and Design Speed**

The relationship between design speed, curvature and superelevation is:

$$E + F = \frac{V^2}{15R} = \frac{DV^2}{85900}$$

where: E = rate of superelevation, ft/ft  
F = side friction factor  
V = design speed, mph  
R = radius of curve, ft  
D = degree of curve

The design speed shall be as set forth in Tables 2.01.01 and 2.01.02.

Maximum superelevation rates are dependent upon the type of roadway, the effect of the superelevation upon vehicles operating at less than the design speed and drainage considerations.

Roads designed with a design speed of 50 mph and greater shall be superelevated. The maximum superelevation rate to be used is 6%. Two-thirds of the superelevation runoff shall be placed on the tangent and one-third on the curve. Roads shall be superelevated in accordance with AASHTO standards.

**3. Horizontal Sight Distance**

Another control on horizontal alignment is the sight distance across the inside of curves. Where there are sight obstructions such as building, trees, hedges, walls, guardrail, or cut slopes, efforts shall be made to provide as long a sight distance as feasible, but never less than the stopping sight distance given in Table 2.02.

Where there are no sight obstructions within the right-of-way, the right-of-way line shall be used as the sight obstruction or alternately by the inclusion of an easement on a record plat to maintain a clear line of sight zone.

**D. General Controls for Horizontal Alignment**

In addition to the specific criteria presented in previous sections, the following general controls shall be utilized:

1. In selecting the alignment for a given design speed, use of the maximum curvature for that speed should be avoided.
2. Consideration shall be given to the alignment and its effect on running speed. The speed at the bottom of a long downgrade, for example, will be higher than on a level grade, and this shall be considered when introducing a horizontal curve.
3. The minimum radius of horizontal curves shall be as shown in Tables 2.01.01 and 2.01.02.
4. Sharp curvature shall be avoided on long high hills. The absence of such reference items as cut slopes, trees, and buildings makes it difficult for the driver to judge horizontal curvature.
5. In compound circular curves, the radius of the flatter curve should not be more than 1.5 times greater than the radius of the sharper curve.
6. Where reverse curves are used a minimum of 100 feet tangent shall be provided between the curves.
7. Broken back curves, that is, two curves in the same direction separated by a short tangent, should be avoided.

**E. Vertical Alignment**

Vertical alignment shall be designed considering the design speed and road classification in order to provide a balance between all geometric elements of the road.

The two components of vertical alignment are grades and vertical curves. Minimum grades are established to assure adequate drainage, and maximum grades are established considering the operational characteristics of the design vehicle. Vertical curves must be at least long enough to provide the required stopping sight distance.

Vertical alignment is controlled by a profile grade line (PGL) shown on the standard details.

Control for profiles at intersections are contained in Section 3.5.G.



**F. Grades**

The minimum grade for all roads and streets shall be 1.0 % unless otherwise approved by the County. Where a curbed section is used, the spacing of inlets must be carefully studied when utilizing the minimum grade to avoid the spreading of storm water across the pavement.

The maximum grade in a cul-de-sac bulb shall not exceed 6%.

The maximum grade varies with road classification and is shown in Tables 2.01.01 and 2.01.02.

**G. Vertical Curves**

Minimum lengths of vertical curves are shown on Table 2.04.

**1. Crest Vertical Curves**

Crest vertical curves must be sufficiently long to provide the required stopping sight distance as listed in Table 2.02.

**2. Sag Vertical Curves**

Sag vertical curves must be sufficiently long to assure that a driver has sufficient distance in which to stop after his headlights first reveal an object on the roadway. Minimum lengths of sag vertical curves shall therefore be based upon a headlight sight distance equal to the stopping sight distance.

**H. General Controls for Vertical Alignment**

In addition to the specific criteria presented in previous sections, there are a number of general controls applicable to vertical alignment.

1. In selecting the vertical alignment base on a given design speed, use of the maximum gradient and minimum length of curve for that speed should be avoided.
2. The length of vertical curve shall not be less than three times the design speed in m.p.h.
3. The length of vertical curve shown in the linear profile around the cul-de-sac bulb at the curb line for closed section roadways shall not exceed 25 feet.
4. A smooth profile grade, consistent with the topography, shall be strived for in preference to a grade with numerous breaks and short lengths of tangent.

5. The profile shall be such that hidden dips hazardous to passing maneuvers are avoided.
6. Short tangents of less than 50' between vertical curves shall be avoided.
7. Where there is an at-grade intersection on a highway with a steep grade, the gradient should be reduced through the intersection to aid turning vehicles and reduce hazards. Specific criteria are contained in Section 3.5.G.

### 3.4 CROSS SECTION ELEMENTS

#### A. Typical Sections

1. Unless otherwise approved by the County, typical paving sections for the various functional classifications are shown in Tables 2.01.01 and 2.01.02.
2. Flag lots/private drives - When provided for by the Zoning Ordinance and/or Subdivision Regulations, for single-family detached residential lots, the following conditions apply:
  - a. Where two or more lots are proposed to be served by the same common access easement, such common access easement shall have a minimum width of twenty-five (25) feet.
  - b. Parking spaces shall not be provided within that portion of private drives which serve two or more lots.
  - c. The responsibilities for private drive maintenance shall be clearly stated in covenants, in a form acceptable to the Planning Commission, which shall be filed in the land records at the time of filing of the final plat, and a certification shall be included on the final plat to the effect that the subdivision is subject to covenants.
  - d. For lots less than one acre in size, the drive shall be a minimum of two inches of pavement on six inches bank run gravel base. Curbing is not required. For lots one acre or more in size, the drive shall be a minimum of six inches bank run gravel. Where any drive connects with a county road, an entrance apron within the county right-of-way shall be constructed of two inches of pavement on six inches bank run gravel base.
  - e. The minimum width of a drive serving two or more lots shall be sixteen (16) feet.
  - f. Common access drives shall be constructed at the time of construction of the subdivision and shall be constructed by the developer.

3. Way - The maximum depth of a way shall be measured from the edge of the right-of-way line of the connecting road to the farthest most portion of the right-of-way. An urban section may have a curbed or uncurbed island. A way with travel in two directions shall have a maximum depth of three hundred feet. For ways with travel in one direction only the maximum depth shall be 100 feet.
4. Place - A place with a paved section of twenty-four feet may serve up to a maximum of sixty-five (65) single-family attached or multi-family dwelling units.
5. Court - A court utilizing urban section shall have a paved section of twenty-four feet.
6. Alleys shall meet the following criteria:
  - a. Layout – Alleys shall provide vehicular access to lots with frontage on a public road or frontage on a minimum 24-foot wide private road. Vehicular access shall be provided to both ends of an alley. No alley shall be more than 450 feet long between intersecting alleys or roads.
  - b. Parking – Where parking on an alley is allowed, parking spaces shall be marked with paint striping outside the minimum travel lane width. Where additional parking width is not provided, “No Parking” signs shall be installed.
  - c. Sight Distance - Alleys shall provide minimum stopping sight distance in accordance with Table 2.02.
  - d. Vertical Clearance – Unobstructed vertical clearance of 14 feet shall be provided overhead of the travel lane width.

**B. Pavement Widths and Cross-Slope**

Roadway pavement widths and pavement cross-slopes shall be as shown on the typical sections. The minimum cross slope of cul-de-sacs from the center point to any radial portion of the cul-de-sac bulb must be 1%.

**C. Pavement Thickness**

Specific criteria are contained in Section 3.8.

**D. Curb and Gutter**

Concrete curb and gutter shall be provided in residential subdivisions where the average lot frontage is less than one hundred feet, and in front of all commercial

and industrial lots or parcels, or where required by the State Highway Administration for properties fronting on State roads.

Curb and gutter shall meet the requirements of the standard details.

The following are the permitted uses of the various types of curb:

- 1. 8" Standard Combination Curb and Gutter:** Any street.
- 2. Modified Combination Curb and Gutter or 6" Standard Combination Curb and Gutter:** Local roads, and minor collector roads in residential subdivisions.
- 3. Bituminous Curb:** Provide in parking lots, private drives, in areas where curbing is not specifically required under "1" above and as temporary construction, transitions for roads not built to ultimate section or to provide continuity of road section.
- 4. Standard Barrier (Header) Concrete Curb:** Traffic islands, private parking lots, and private roads.
- 5. Special Designs:** Granite blocks, precast curb (wheel stops), steel curb, pressure-treated wood, monolithic curb/sidewalk, or other alternate curbing design may be used on private parking lots and private drives or with prior approval of the County.

**E. Shoulders**

Shoulders shall be as shown on the typical Sections. Paved shoulders are required for public streets in the Development District Residential Zones (RL, RM, RH,& RO), and in planned development zones, including PUD and WPC zones.

**F. Medians**

Medians shall be as shown on the standard details. Raised medians six feet or less in width should have a paved surface.

**G. Pedestrian Travel Ways:**

Refer to the Charles County Standard Detail Manual. For the design of biker paths inside the right-of-way or outside the right-of-way, refer to the most recent AASHTO "Guide for the Development of Bicycle Facilities." (Reference 5)

**1. Sidewalks/Hiker-Biker Paths**

Areas normally requiring sidewalks are so indicated on the typical sections contained in the Standard Detail Manual R/2.10 through R/2.16.1. The

minimum pedestrian walk width shall be four feet outside the urban road standards district. Where there will be a large number of pedestrians, such as near schools and in some commercial areas, the pedestrian paths shall be made sufficiently wide to accommodate the anticipated pedestrian demand. The selection of a pedestrian walk width in such areas is subject to review and approval by the County.

Typically, a Hiker-Biker Path will be part of a continuous, comprehensive link, as opposed to the conventional concrete sidewalk. Residential areas, school and open space areas, and short routes connecting residential and employment centers typically warrant provisions for pedestrians/bicyclists.

Hiker-Biker Paths shall be (a) separated from the roadway but within the street right-of-way, or (b) within open space. The County shall be consulted when planning a Hiker-Biker Path within or adjacent to a street right-of-way. When planning Pedestrian Travel Ways, the County shall be consulted to provide coordination between the planned Pedestrian Travel Ways and those in surrounding areas.

Construction of a Community Comprehensive Pedestrian Travel Way network may result in a waiver of conventional sidewalk requirements as per the approval of the Planning Commission.

Where Hiker-Biker Paths intersect with vehicular roadways, a visible indicator such as road striping and/or signage should be provided as per the most recent MUTCD standards. Access to Hiker-Biker Paths by motor vehicles shall be discouraged by use of physical barriers, signage, or grade separations where practical.

## **2. Maintenance of Pedestrian Travel Way**

- a.** Within the designated Urban Road Standards District (Appendix G), if any portion of the pedestrian travel way is outside of the right-of-way and associated easement or contains any amenities such as street furniture, dining tables, benches, etc., then the abutting property owner, Homeowners' Association (HOA) or other association as approved by the county is responsible for maintenance of the entire pedestrian travel way, including all amenities within. An easement document will be executed between the adjoining property owner or respective HOA and the County to define maintenance requirements, installation of utilities, and public access rights.
- b.** Maintenance for Hiker-Biker Paths and all sidewalks within subdivisions which are located within the County right-of-way, both of which were designed and constructed in accordance with the 1995 Road Ordinance or more recent revision, shall be the responsibility of Charles County.

- c. It is the responsibility of the abutting property owners, the respective Home Owners' Association or other association as approved by the county to remove snow and ice from the Hiker-Biker paths and sidewalks.

#### **H. Side Slopes**

Side slopes for excavations and embankments should be as flat as feasible considering earthwork and right-of-way requirements. The normal maximum slope shall be 2:1. Where poor soil conditions exist, soil tests and a slope stability analysis shall be conducted to determine an acceptable slope.

All slopes shall be covered with topsoil and seeded and mulched.

#### **I. Guardrail**

Guardrail shall be required when combinations of embankment slope and height warrant guardrail for open sections as shown in Appendix "B". Wherever feasible, the embankment should be adjusted to eliminate the need for guardrail. Where guardrail is warranted, it shall be placed as shown on the typical sections and shall conform to the Maryland State Highway Administration Standard Details.

Factors to be considered when determining the need for guardrail at fixed roadside objects include design speed, roadway functional classification, type of obstacle, and distance from pavement edge to the obstacle. The determination of need for guardrail is subject to review and approval by the County.

#### **J. Utility Location**

The locations for the placement of utilities within the road right-of-way are shown in the Standard Details Manual R/2.20. Where conditions are such that the use of the normal location arrangements would be infeasible, an alternate arrangement shall be developed and submitted to the County for review and approval. All utility owners shall have their utility installation plans approved by the County before any construction work is commenced.

### **3.5 INTERSECTION DESIGN**

#### **A. Introduction**

To assure that an intersection is designed to safely and efficiently accommodate the traffic desiring to use it, certain procedures and analyses must be performed. This section contains the geometric design elements applicable to intersections, the procedures to be followed in developing the best possible design layout and the information required on the construction drawings.

**B. Geometric Design****1. Skew Angle and Horizontal Curvature**

Roadway centerlines shall intersect as closely as possible to right angles with a maximum skew of 70 degrees and continue through the intersection without offset or break, unless otherwise approved by the County.

Where the radius of the horizontal curve of a street approaching an intersection is less than or equal to 300 feet, a tangent at least 50 feet long shall be placed between the flowline of the intersecting street and the P.C. of the curve.

**2. Design Vehicles and Turning Paths**

Many intersection design details, such as curb radii and island locations, depend upon the choice of the design vehicle. The larger design vehicles require larger curb radii and wider lane widths between islands than do the smaller vehicles. Selection of the design vehicle depends upon the functional classifications of the intersecting streets, adjacent land use, and volume and type of vehicles that will use the intersection. Turning paths for the various design vehicles are shown in "A Policy on Geometric Design of Highways and Streets (Reference #1 of Appendix H).

**3. Minimum Curvature for Turning Movements**

Table 2.05 shows the minimum fillet radius (either curb or edge of roadway) which will permit a design vehicle to make a ninety degree turn both with and without encroachment upon adjacent lanes.

**C. Auxiliary Lanes/Turning Lanes****1. General**

The provision of auxiliary lanes shall be required under any of the following conditions for either public or private access points onto a public road:

- a. The level of service analysis indicates a need for auxiliary lanes.
- b. The difference between the design speeds of the through roadway and turning roadway exceeds 20 m.p.h. and signalization is not provided.
- c. The design speed of the roadway is 40 m.p.h. or greater and vehicles waiting to turn left or right would pose a hazard to through traffic.

**2. Exceptions**

If the project is exempt from providing a traffic study in accordance with the Adequate Public Facilities section of the Zoning Ordinance, auxiliary lanes will not be required.

**3. Width and Length**

Auxiliary lanes shall be twelve feet wide. In closed sections, this width shall be measured to face of curb.

On closed sections, the taper of an auxiliary lane shall consist of reverse symmetrical curves. On open sections, the taper may consist of either full width or a straight line.

The minimum lengths required for auxiliary lanes and taper are shown in Table 2.11. If storage length, based on traffic volume, exceeds the required length of deceleration lane (excluding taper), greater deceleration lane length shall be provided.

**D. Median Lanes and Openings**

A median lane is a left-turning auxiliary lane located within the median, and the determination of its need, as well as its geometrics, such as length and width, shall be as for any auxiliary lane.

The design of the median opening shall normally be based upon a fifty-foot radius tangent to the median edge and crossroad centerline. Where an opening will be used by a large number of turning trucks, such as in commercial or industrial areas, a radius of seventy-five feet shall be used. (refer to Standard Detail R/2.21)

The median opening design should be checked to assure that opposing left turns can be made without conflict.

A semicircular end shall be used on all median islands six feet or less in width. For widths greater than six feet, a bullet nose shape shall be used.

**E. Traffic Islands**

Traffic islands are areas between traffic lanes used for controlling vehicle movements or for pedestrian refuge. All islands with an area of at least seventy-five (75) square feet shall be raised and bounded by a standard curb or combination curb and gutter. Islands with areas less than seventy-five (75) square feet shall have a normal pavement section and be marked by paint.

Divisional islands, which are islands separating opposing traffic flows within the intersection area, shall be a minimum of four (4) feet wide. The offset from the edge of travel lane to the approach nose shall be least three (3) feet.



The approach noses of traffic islands may be depressed to two (2) inches above the pavement if approved by the County.

On islands adjacent to turning roadways, the approach nose shall be offset at least four (4) feet from the edge of the adjacent through lane and a minimum of two (2) feet from the edge of the turning roadway.

The nose radii of triangular islands shall be two (2) feet, except the right angle corner, which shall have a five (5) foot radius. The approach nose of divisional islands shall have a 1-foot radius, offset as discussed above. The end of a divisional island shall be in accordance with median openings.

All divisional islands, six (6) feet or less in width, as well as triangular islands of less than approximately 150 square feet, shall be paved. Divisional islands wider than six (6) feet, and triangular islands greater than 150 square feet in area shall be seeded and mulched. Sidewalks shall be included where directed by the Office of Planning.

**F. Intersection Sight Distance**

At signalized intersections, the movements are controlled and provision of the stopping sight distance as given in Table 2.02 is sufficient.

The following criteria have been established for the determination of unsignalized intersection sight distance:

**1. Crossing Movement**

Sufficient distance, both left and right, to enable a stopped vehicle to cross the intersection before a vehicle on the major highway reaches the intersection, even though this vehicle appears just as the crossing maneuver begins, and without the through vehicle have to decelerate.

**2. Left Turn**

Sufficient distance on the left to enable a stopped vehicle to turn left onto the major road before a vehicle approaching from the left reaches the intersection, even though this vehicle appears just as the left turn begins, and without the through vehicle having to decelerate. Also, sufficient distance on the right to enable a stopped vehicle to turn left onto the major road without a vehicle on the major road, approaching from the right, having to decelerate more than 10 m.p.h., even though the approaching vehicle appears just as the turn begins.

**3. Right Turn Movement**

Sufficient distance on the left to enable a stopped vehicle to turn right onto

the major road without a vehicle on the major road, approaching from the left, having to decelerate more than 10 m.p.h., even though the approaching vehicle appears just as the turn begins.

The minimum sight distance for each of these criteria are given in Table 2.06.

The possible movements at each intersection shall be determined and appropriate sight distance selected from Table 2.06.

#### **G. Intersection Vertical Alignment**

##### **1. General**

Typical section pavement slopes of the street with the higher functional classification shall be carried through the intersection without deviation. The pavement slopes of the street with the lower classification shall be warped to meet the pavement edge of the through street. Where two roads of the same classification intersect, they shall be connected by considering one the more important and transitioning the other as stated above, or by transitioning both roadways.

##### **2. Intersection Grades**

As discussed above, one of the intersecting roads shall be determined to be the more important and its grade carried through the intersection without interruption. The grade of the other road as it approaches the through road shall have a landing grade meeting the following criteria:

| <b><u>FUNCTIONAL<br/>CLASSIFICATION</u></b> | <b><u>MAXIMUM GRADE<br/>THROUGH INTERSECTION</u></b> | <b><u>DISTANCE FROM<br/>INTERSECTION</u></b> <sup>(1)</sup> |
|---|--|---|
| <b>Arterial</b>                             | <b>3.0%</b>  | <b>200'</b>   |
| <b>Collector</b>                            | <b>3.0%</b>  | <b>175'</b>   |
| <b>Local Streets</b>                        | <b>4.0%</b>  | <b>40'</b>  |

<sup>(1)</sup> Distance measured from pavement edge of intersecting road to the PVC of the vertical curve.

#### **H. Pedestrian Facilities**

Ramps for pedestrians shall be provided at all intersections and other major points of pedestrian flow having sidewalks. Typical ramps are contained in the Standard Details Manual. Ramps shall meet Federal, State, or Local requirements as applicable. (Reference Detail R/2.29 )

**I. Right-of-Way at Intersection**

The right-of-way lines at intersections shall be adequate to accommodate all the required design features but shall not be less than that required by the latest "Subdivision Regulations".

**J. Intersections with State Highways**

Criteria and permits related to intersections with State Highways are contained in the "Maryland State Highway Access Manual."

**3.6 ENTRANCES**

To obtain uniformity and maximum safety, the design and location of commercial and industrial entrances shall be in accordance to the standards set forth in the "Maryland State Highway Access Manual" of the Maryland State Highway Administration. Entrances shall be as shown in the Standard Details Manual.

Permit procedures for entrances or any work performed within County right-of-way are outlined in Section 5.1.

**3.7 OFF-STREET PARKING LOTS**

Off-street parking lots must be designed to accommodate the anticipated demand, provide parking stalls of sufficient size to accommodate the vehicles, and provide safe and convenient traffic flows.

The width and number of stalls shall be as required by the Charles County Zoning Regulations.

The parking lot design shall discourage random movements and, through the use of traffic engineering aids such as signs and islands, provide positive guidance to the motorists. Efforts shall be made to minimize vehicular and pedestrian conflicts. All parking lot designs shall be considered at the time of site plan review by the County.

Parking for the handicapped shall be provided in all off-street parking lots in accordance with the Charles County Zoning Ordinance and in accordance with Federal or State requirements.

Pedestrian ramps should be located so as to provide easy and direct access between the handicapped parking spaces and the building entrance.

The paving section of parking lots shall be in accordance with Table 2.07 and the Standard Details.

Private roads, private drives, alleys, parking aisles and commercial/industrial driveways shall be designed to provide an unobstructed route for fire truck access to buildings and fire hydrants. Refer to Section 3.2.C for fire truck design vehicle characteristics.

**3.8 PAVEMENT SECTIONS**

All paving sections shall be in accordance with Table 2.07 and the Standard Details.

**3.9 AT GRADE CROSSING FOR GOLF CART**

At grade golf cart crossings shall only be permitted on local residential public streets. The local residential public street shall not carry through traffic and shall be an internal subdivision road. Stop signs shall be placed on the golf cart path at their intersection with the local road. The at grade crossing shall be treated as a pedestrian crossing and advanced crossing signs (with golf cart logo) and other appropriate signage and pavement markings shall be installed as per MUTCD.

The roadway and golf cart path centerline shall intersect as closely as possible at right angles to the public road with a maximum skew of seventy (70) degrees and continue through the intersection without offset or break. The golf cart path shall be tangent inside the public right-of-way. The maximum grade of the golf cart path in the public right-of-way shall not exceed 3%. The sight distance at the intersection shall meet the requirements of the Road Ordinance.

Golf cart paths shall be constructed with asphalt or concrete surface within the public right-of-way. The minimum paved width of the path shall be 12 feet. The minimum cross slope for paved surface shall be 1%. The pavement material shall be placed upon 95% compacted subgrade. The pavement material detail shall be as follows:

Asphalt Path: 6" CR6 with 3" surface asphalt SF

Concrete Path: 6" concrete (mix #2) with 6x6 #10 wire mesh

**3.10 ROUNDAABOUT**

Roundabouts shall be designed in accordance with the most recent Maryland State Highway Administration Roundabout Design Guidelines.

**3.11 SCHOOL BUS TURNAROUND**

School bus turnarounds shall be provided for residential subdivisions in accordance with the latest Policy # 3700 (Transportation) of Series 3000 of "Policies Regulations By-laws of Board of Education of Charles County." The location of school bus turnarounds shall be shown on the approved Preliminary Plan of Subdivision.

A cul-de-sac of a minimum 60' paved radius is required for school bus turnarounds.

**3.12 CURB OPENINGS**

Curb openings shall be constructed in accordance with the MSHA Standards.

**3.13 ACCESS MANAGEMENT FOR COUNTY ROADS****A. Policy in General**

The access management policy defines locations for future median openings and access points for certain roads within the County. As residential, business, industrial, and commercial establishments develop or re-develop land adjacent to the access managed roads, there is an interest in how these properties gain access to the road. Where applicable, properties that develop or re-develop along an access managed roadway will be required to consolidate access points to both the property itself and the adjacent properties. Minimizing access points will increase safety and level of service of the roadway.

**B. Locating Median Openings and Access Points**

Median openings, intersections, and property access points will be determined by the Board of County Commissioners for designated County roadways. The tables in Appendix “F” designate median openings and access points for select roadways by location or distance from a known point.

**1. Access Points**

Access points will be one of two types: an intersection (median break) or right-in/right-out (no median break).

- a. Intersection (median break). The intersection shall consist of a median break to allow traffic to enter and exit a roadway from an adjoining or adjacent roadway. Access points which line up with the median openings may be either public roads or private driveways.
- b. Right-in/right-out (no median break). Right-in/right-out access points will be assigned to areas that are less than 1,320 feet from the nearest intersection or to an adjoining roadway of a low traffic volume. A minimum separation of 750 feet from adjacent access points is used wherever possible.

**2. Standards**

- a. Median openings on the four (4)-lane road are pre-determined at locations that are approximately 1,320 to 1,500 feet apart. Right-in/right-out access points are approximately 750 feet apart from adjacent access points.
- b. All median openings, intersections, and access points to access managed roadways will be at pre-determined locations as shown in the table for the corresponding roadway in Appendix “F.”
- c. The access points for developing and re-developing properties will be

consolidated within the property and any adjacent properties, wherever possible.

- d. All station numbers in the tables of Appendix “F” correspond to those on approved plan sheets. If station numbers are not used, distances from known intersections will be given.
- e. For each access point listed in the tables of Appendix “F”, the determination of a median opening is indicated with a “Yes” or “No” in the column titled “Median Opening.” “Yes” indicates that a median opening exists or has been pre-determined for the subject location. “No” indicates that the subject location is determined to have right-in/right-out access only.

### **3. Inter-Parcel Connections**

Developers shall provide inter-parcel connections to adjacent properties where they would provide alternative access to the properties and serve to minimize direct access to the access managed roadway.

### **4. Access Point Adjustments**

All locations are approximate and may be subject to adjustment based on engineering. The adjustment of an access point location up to 25 linear feet may be approved by the County Engineer. An access point adjustment greater than 25 linear feet will require a modification pursuant to Section C of this Chapter.

### **C. Addition to or Modification of Access Management Tables**

The County Commissioners, in their capacity as the chief executive body of the Charles County Government, are hereby authorized to add to or modify Appendix “F” of the Charles County Road Ordinance: “Access Management Tables,” from time to time, as circumstances warrant, in accordance with procedures to be adopted by the County Commissioners.

### **3.14 URBAN ROADS**

Urban road standards shall be applied within the Urban Road Standards District. A map of this district is shown in Appendix G. Design criteria are contained in Table 2.01.02.

## **ARTICLE IV - DRAINAGE**

### **4.1 STORM DRAINAGE**

Storm drainage shall be designed in conformance with the Storm Water Management Ordinance, Section 7.5.

## **ARTICLE V - PERMITS**

### **5.1 PERMITS**

#### **A. General Requirements**

No person shall do any work within a County right-of-way without first obtaining a permit from the County. Such permit shall be transferable upon application to the County and it may be revoked if any provisions thereof, or if any provisions of this Ordinance are violated. Willful refusal of any permittee to stop construction after receiving notice of such revocation shall be deemed a violation of this Ordinance. Before a permit is issued, the following requirements for application, bond, fee, plans, and right-of-way must be met.

#### **B. Permit Application**

Application for permit shall be made on forms provided by the County and, when required by the County, shall be accompanied by special specifications peculiar to the scope of work covered by the permit and suitable tracings of detailed plans of the work.

#### **C. Right-of-Way**

If subdivision approval is applied for lots abutting road rights-of-way which are less than standard width for the proposed type of roadway, the developer will be required to dedicate the additional right-of-way and slope easements necessary to obtain the necessary width as to the portion of same that the development fronts on.

#### **D. Alternate Standards**

Upon determination by the Highway Engineer that the Standards and Specifications are not feasible or practicable for a particular project, he may require such alternate or additional Standards and Specifications in accordance with good engineering principles as may be deemed necessary, and such alternate or additional requirements shall be part of and a condition of the permit.

#### **E. Permit Expiration**

Such permit shall expire, as stated on the permit, unless extended in writing by the County stating the reasons for extension. It shall be the responsibility of the permittee to apply for an extension prior to the expiration of the permit. The permittee shall notify the Highway Engineer within two days of the date the work commences.



**5.2 PERMITS FOR UTILITIES****A. Permission**

No public utility corporation, person, or organization shall work on utilities in County rights-of-way until a permit for same has been issued by the County . Permission for pavement cuts will be given only if it is proven that it is necessary.

**B. Emergency**

In case of an emergency, a pavement cut will be permitted. Notice shall be given as soon as possible and a permit obtained, but not more than 48 hours after it is made.

**C. Restoration**

In case of any cut into the surface of any road in the County Road System, the public utility, person, corporation, or organization making it shall be responsible for restoring the road base and surface according to the Standard Detail Manual, and repairing paving failures and settlements due to the utility cut.

**D. Processing**

Requests for a pavement cut for water and/or sewer house connections shall be processed as follows:

1. Reflected on the building permit site plan if applicable.
2. Requested through the utility permit application.
3. Permission for pavement cuts shall be granted only if it is proven that alternatives are impractical.
4. All the necessary repairs to the road shall be made as outlined in sec. 5.2.C.

**E. Blanket Permits**

Blanket permits to cover non-emergency work shall be obtained by public utility corporations on a yearly basis.

**5.3 FEES****Permit Fee**

The fee for issuance of a permit for road improvements and the inspection of the work shall be as contained in the latest Fees and Charges Schedule.

**5.4 BONDS**

- A. No permit shall be issued until the applicant, as principal, has posted a bond with an approved surety or other methods acceptable to the County.
- B. The permittee or his agents shall comply with all the applicable terms, conditions, provisions, requirements, Standards and Specifications of this Ordinance.
- C. The permittee or his agents shall faithfully complete the work for which the permit is issued.
- D. The permittee or his agents shall save harmless Charles County from any expense incurred through the failure of the permittee or his agents to complete the work as required by this Ordinance, or from any damages growing out of the negligence of the permittee or his agents.
- E. A cash, surety bond, irrevocable letter of credit issued by a financial institution, or other means approved by the County equal to the total cost of the project as approved by the County, including an additional 10% of the cost for contingencies shall be furnished by the applicant conditioned upon the satisfactory completion of all work covered by the permit. Upon acceptance by the County of the work covered by the permit, the County shall certify such performance bond as being discharged.
- F. Before acceptance, all bonds shall be approved by the County. All bonds covering construction filed hereunder shall be released upon, but not before acceptance of the completed road by the County in accordance with Section 5.11 hereof.

**5.5 ROAD PLANS**

The developer shall have prepared and submitted to the County suitable plans of the proposed work as required by the Subdivision Regulations of Charles County, this Ordinance, the Stormwater Management Ordinance, the Plan Preparation Package and any other applicable Federal, State or Local requirements.

The Highway Engineer may require any necessary additional data pertinent to the scope of the work covered by the permit.

Approval of the plans by the County shall be indicated by signature on the plan sheet. Plans may be approved for various phases such as profile grade, storm drainage, and paving details.

All plans submitted for approval must be prepared and signed by a Professional Engineer or Land Surveyor registered to practice in Maryland. All plans submitted for approval shall conform to the Standards and Specifications of this Ordinance, unless prior approval has been given for exceptions.

**5.6 CONSTRUCTION REQUIREMENTS**

- A.** All roads to be constructed shall be graded to the full width of the right-of-way.
- B.** For multi-lane Arterial roadways, divided or undivided, all travel lanes should be constructed simultaneously. However, if only two lanes of a closed section Arterial are constructed at the County's request or permission, then the outside lane shall be temporarily constructed as an open section roadway without curb and gutter. The curb and gutter for the outside lane shall be placed, or installed, at the time of construction of the two remaining travel lanes.
- C.** The subgrade on which pavement for a public road is planned must have a minimum C.B.R. (California Bearing Ratio) value of 7. Where the subgrade is less than a C.B.R. of 7, a redesign of the pavement section by a geotechnical engineer, a professional engineer, registered in the State of Maryland will be required and submitted to the County for review and approval prior to the placement of subbase material.

In addition, for all public roadways a registered, professional geotechnical engineer must evaluate the adequacy of the proposed roadway pavement section based upon existing subsurface and subgrade soil conditions, including CBR values, and the number of equivalent axle loadings (EAL's) determined during the traffic study. The evaluation must consider the worst case scenario during the design life of the pavement section, including construction of all various sections, or phases, of the project as well as construction of the buildings or homes.

- D.** No work on road pavement shall be started until all underground utilities proposed to cross said road have been installed and properly backfilled.
- E.** All materials used in construction shall conform in every detail to the County Standard Specifications for Construction Manual or as otherwise approved and accepted by the County.
- F.** The permittee shall be responsible for the maintenance of vehicular and pedestrian traffic on the roadway, and shall provide materials, labor, and equipment as necessary to properly maintain traffic. Excavations or other hazards shall be properly barricaded at all times and lighted at night; proper connections shall be made to drives and walks at occupied residences. The permittee is required to keep the roadway shaped up by blading, as necessary, and to correct muddy or soft subgrade by placing temporary gravel or stone. The permittee is responsible for plowing snow sufficiently to maintain access to inhabited residences or other facilities until the road is finally accepted by the County. It shall be the responsibility of the permittee to remove any dirt and debris deposited on streets in and adjacent to the work area during the construction period.

- G.** Street name signs of a design approved by the County shall be erected at each new street or road intersection at the expense of the applicant, and shall conform to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition.

All new road projects shall be provided with signage in accordance with the most current edition of Manual on Uniform Traffic Devices (MUTCD) prior to being accepted by the County.

Street names shall be subject to approval by the County 9-1-1 Addressing Office. Names shall not duplicate or closely resemble existing street names.

- H.** Barricades shall be erected of an approved design, conforming to the MUTCD.
- I.** The permittee is responsible for plowing of snow, in accordance with the County's Snow Removal Schedule, from roads covered by a Development Services Permit sufficiently to maintain access until the road receives a Final Completion Acceptance by the County. Prior to issuance of the Development Services Permit, the developer shall submit a copy of the snow removal contract for the streets covered by the Development Services Permit to the County.
- J.** Upon evidence that the developer does not comply with removal of snow, as outlined in Sec. 5.6.I, the County will notify the developer of the intent to withhold building permits and inspections in the areas covered by the Development Services Permit. The developer will have five (5) days from the date of "notice of intent to withhold building permits and inspections" to provide evidence to the County Commissioners as to why the permits and inspections should not be suspended. A final decision that results in a suspension shall be effective up to 180 days. In addition, the County may remove the snow and bill the developer for the cost of snow removal. The Developer's Agreement shall include a provision to hold the County harmless for any damage which may occur as a result of the County removing snow.

## **5.7 VARIANCES/EXEMPTIONS**

The County may grant a written variance from any requirement of this Ordinance, if there are exceptional circumstances applicable to the site, such that strict adherence to the provisions of this Ordinance will result in unnecessary hardship and not fulfill the intent of the Ordinance. A written request for variance shall state the specific variances sought and reasons for their granting; however, all variances still must adhere to good engineering practices and must maintain consistency with other County regulations.

Variances should be directed to the County Highway Engineer. Persons may appeal decisions to the Director.

Variance requests for any change to access points as shown in Appendix "F" shall be directed to the County Commissioners or their designee.

**5.8 TRANSITIONAL PROVISIONS**

The requirements established in the Charles County Road Ordinance shall not apply to any construction proposed pursuant to a valid permit issued prior to July 3, 2011.

The requirements established in the Charles County Road Ordinance shall not apply to pending permit applications provided these permit applications were submitted prior to July 3, 2011, are issued permits within sixty (60) days of July 3, 2011 and that some manifest commencement of work is undertaken within 6 (six) months of the date of the issued permit.

**5.9 INTERPRETATION OF STANDARDS**

The provisions of these Specifications in their interpretation and application shall be construed as minimum requirements. Should any requirement of these Specifications be found to be in conflict with those imposed by other provisions of law, the more restrictive or higher standards shall prevail, as interpreted by the County Highway Engineer.

**5.10 INSPECTION AND ACCEPTANCE**

- A. All construction work on improvements required herein shall be subject to inspection during and upon completion of construction by the County or designated representative, to verify conformance with the approved plans. The County shall be notified forty-eight hours prior to any work in accordance with the following schedule:
  - 1. Before placing sub-base.
  - 2. Before placing base asphalt.
  - 3. Before placing surface asphalt.
  - 4. As drainage work progresses.
  - 5. As curb and gutter work progresses.
- B. It shall be the duty of the developer to arrange for the inspection of streets and roads by the County. The County may require any work done without an inspection to be removed and redone at the developer's expense.
- C. For all proposed Arterial Roadways, a County Road Inspector will be assigned to the project for full-time monitoring and inspection services.
- D. No construction shall commence prior to the developer obtaining a Permit from the County (subject to a fine of \$500 per violation).

**5.11 APPROVAL AND ACCEPTANCE****A. Final Approval**

Final approval of construction work under any permit shall be given by the Highway Engineer.

**B. Acceptance**

Final approval shall be certified to the Commissioners by the Highway Engineer. Actual acceptance into the County Highway Maintenance System for perpetual maintenance shall be only by Order of the Commissioners in each individual case.

**C. Partial Acceptance**

Final approval of a part, less than all of the work covered by a permit may be requested and given, and such approved part may be accepted by the Commissioners, but no bond shall be released before all work called for by the permit is completed, unless another bond is posted to cover the remaining work. A partial reduction of the bond may be allowed at the option of the Commissioners. This bond will only be accepted on work that cannot be completed due to extenuating circumstances to be determined by the County.

**D. As-Built Drawings**

After final approval is given, as-built drawings will be delivered to the County and approved before bond release.

**5.12 PENALTIES**

Any person, corporation, association, partnership, or the agent of any such person who shall violate a provision of this Ordinance, or shall fail to comply with any requirements hereof, shall be guilty of a misdemeanor punishable by a fine of not more than \$1,000, by imprisonment not exceeding ten days, or both fine and imprisonment.

## **ARTICLE VI - TRAFFIC**

### **6.1 INTRODUCTION**

The prime functions of any roadway network are the movement of traffic, both vehicular and pedestrian, and the provision of access to adjacent land all in a safe and efficient manner. This section is being incorporated to give guidelines to ensure these prime functions.

### **6.2 TRAFFIC SIGNS AND PAVEMENT MARKINGS**

Signs and pavement markings which warn, guide, and/or regulate traffic (both vehicular and pedestrian) are required to assure the maximum safety and efficiency of the roadway network. All signs and pavement markings shall be designed and installed in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD).

In addition to the requirements of the MUTCD, the following requirements shall also be met.

- A. All pavement markings shall be a minimum of five (5) inches wide. (The use of six-inch wide centerline and edge line markings shall require the prior approval of the County.)
- B. Centerline stripes are required on major collectors and above. Centerline and shoulder striping shall also be provided where paved shoulders are required by Section 3.4.E. Developers shall follow the procedures set forth in the "Standards and Guidelines for Traffic Signs and Pavement Markings in New Subdivisions" contained in Appendix "C".
- C. All signs shall be mounted on galvanized channel posts.
- D. The street sign and stop sign shall be in place immediately after the placement of the base asphalt for that street.
- E. On closed-section two-way roadways with a pavement width wider than 24' and narrower than 36', "No Parking" signs may be provided to prohibit parking on one side.
- F. The County Highway Engineer may require additional road signage as necessary to support the Zoning Regulations as outlined in Chapter 297 and the Parking Regulations as outlined in Chapter 287 of the County Code.

**6.3 RAILROAD AT-GRADE CROSSINGS**

Protective devices at railroad at-grade crossings shall be in accordance with the MUTCD (Ref. 4).

**6.4 MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC**

Refer to Appendix "D".

**6.5 STREETLIGHT POLICY**

Streetlights in Charles County shall be the sole responsibility of the respective private owners (subdivision housing associations, commercial establishments, etc.) and local municipalities. The County shall not allow streetlights within the County right-of-way, with the exception of within the designated Urban Road Standards District. The County shall not provide, maintain or operate streetlights.

Special safety lighting (lighting at intersections, rail crossings, etc.) may be required by other regulations or by the County as determined on a case-by-case basis.

**6.6 PRIVATELY OWNED STRUCTURES**

County Regulations and this Road Ordinance prohibit the placement of any privately owned permanent or semi-permanent structures within the road right-of-way such as fences, basketball hoops and/or sports goals, skateboard ramps, wheel stops, large stones/boulders, wood landscaping ties or concrete bricks, signs, gazebos, sprinkler systems, and all atypical hazardous structures and items creating an obstruction.

The only exceptions are the following:

- A. Regulation United States Postal Service (USPS) mail boxes and newspaper boxes on breakaway-type posts (as shown in the Charles County Standard Detail Manual).
- B. Regulation USPS cluster box units (CBU) on closed-section (curbed) roadways with a "Local Road" or "Minor Collector" classification, where the posted speed limit is 30 mph or lower. Installation shall be according to USPS guidelines and as shown in the Charles County Standard Detail Manual, R/2.49. CBU locations shall be approved by the County Highway Engineer and must be consistent with the requirements of the latest version of the AASHTO "Roadside Design Guide." CBU's shall be located a sufficient distance away from public road intersections to provide minimum intersection sight distance and maintain flow of traffic. They shall not be placed on the inside of horizontal curves where they would obstruct the minimum stopping sight distance.



- C. Brick mail boxes without footings, architectural enhancements to residential driveway entrances and amenities provided in the urban areas. The brick mail boxes and enhancements to driveway entrances will only be allowed on residential roadways with a “Local Road” or “Minor Collector” classification where the posted speed limit is 30 mph or lower, and are prohibited on all Major Collector and Arterial Roads. Additionally, a horizontal clear zone of 10 ft. or more from the edge of the traveled way must be maintained for all driveway entrance enhancements.

With the adoption of this policy, it is understood and agreed to by the property owner(s), its successors, and assigns that Charles County Government shall have complete access to the County right-of-way and all infrastructure improvements within that right-of-way. Further, the County and its representatives shall not be responsible for any damages caused during the course of operations and maintenance to the private improvements or property within the County right-of-way, such as a brick mail box, an architectural enhancement at the driveway entrance and amenities provided in the urban areas. Any property owner that has constructed or plans to construct a brick mail box or an architectural enhancement at the driveway entrance over a drainage culvert pipe within the right-of-way is responsible for the maintenance of the mail box and/or architectural enhancement.

Adherence to these rules will greatly reduce liability and will assist in assuring the safety of pedestrians and vehicles. Any non-compliance to the above regulations may be immediately removed without notice by Charles County at the owner’s expense and/or may include issuance of a penalty or fine to the owner in accordance with the Road Ordinance.

**APPENDIX "A"**

**TABLES**

**TABLE 2.01.01 - SUMMARY OF DESIGN CRITERIA**

| Classification                          | Road Type                              | Type   | R/W <sup>(2)</sup><br>Width | Pavement<br>Width | Travel<br>Way<br>Width | Shoulder<br>Width <sup>(5)</sup> | Design<br>Speed<br>(mph) | Min.<br>Center Line<br>Radius | Max.<br>Grade | Minimum<br>Pavement<br>Type <sup>(6)</sup> | Detail<br>No(s). |
|---|--|--------|-----------------------------|-------------------|------------------------|----------------------------------|--------------------------|-------------------------------|---------------|--|------------------|
| Principal Arterial                      | -                                      | -      | (1)                         | (1)               | -                      | -                                | 60                       | (1)                           | 6             | (1)  | (1)              |
| Intermediate<br>Arterial <sup>(3)</sup> | Pkwy                                   | Closed | 150'                        | 2@ 36'            | -                      | 4' Inside                        | 50                       | AASHTO <sup>(4)</sup>         | 7             | P-6  | R/2.10           |
|   |  | Open   |                             | 2@28'             | 48'                    | 8' Out                           |                          |                               |               |  |                  |
|   | Blvd.                                  | Closed | 80'-100'                    | 52'               | -                      | 8'                               | 50                       | AASHTO <sup>(4)</sup>         | 7             | P-6  | R/2.11           |
|   |  | Open   |                             | 52'               | 48'                    |                                  |                          |                               |               |  |                  |
| Minor Arterial <sup>(3)</sup>           | Pkwy                                   | Closed | 100'                        | 2@24'             | -                      | 4' Inside                        | 50                       | AASHTO <sup>(4)</sup>         | 7             | P-5  | R/2.12           |
|   |  | Open   | 150'                        | 2@28'             | 48'                    | 8' Out                           |                          |                               |               |  |                  |
|   | Blvd.                                  | Closed | 80'-100'                    | 52'               | -                      | 8'                               | 40                       | 600'                          | 8             | P-5  | R/2.13           |
|   |  | Open   |                             | 52'               | 48'                    |                                  |                          |                               |               |  |                  |
| Major Collector                         | Road, Drive                            | Closed | 60'-80'                     | 36'               | -                      | 8'                               | 40                       | 500'                          | 8             | P-4  | R/2.14           |
|   |  | Open   |                             | 28'               | 24'                    |                                  |                          |                               |               |  |                  |
| Minor Collector                         | Road, Drive,<br>Circle                 | Closed | 60'                         | 30'               | -                      | 8'                               | 35                       | 300'                          | 10            | Res.=P-3                                   | R/2.15           |
|   |  | Open   |                             | 26'               | 24'                    |                                  |                          |                               |               | C & I=P-4                                  |                  |
| Local Road                              | Court, Street,<br>Lane, Way,<br>Avenue | Closed | 50'                         | 24'               | -                      | 6'(4')                           | 30                       | 150'                          | 10            | P-2  | R/2.16           |
|   |  | Open   |                             | 22'               | 20'                    |                                  |                          |                               |               |  |                  |
| Private Road                            | Place                                  | -      | -                           | 24'               | -                      | -                                | 25                       | 100'                          | 12            | P-2  | -                |
| Private Dr.                             | One Lot                                |        | -                           | 10'               | -                      | -                                | 15                       | 38'                           | 15            | Sec.<br>3.4.A.2.d                          | R/2.33-          |
|   | Two or more Lots                       |        |                             | 16'               |                        | -                                |                          |                               |               |  | R/2.37           |

<sup>(1)</sup>Consult PGM <sup>(2)</sup>Includes all Utility Easements <sup>(3)</sup>Parkway = Divided, Blvd = Undivided <sup>(4)</sup>Superelevated. Minimum centerline radius shall be provided in accordance with AASHTO (ref. 1).

<sup>(5)</sup>Note: 1. Travel Way Width is defined as the pavement area between edge lines & does not include the shoulder area nor the widening area as shown on the shoulder detail. (Detail R/2.18)

2. Pavement Width, for open section roadways, is defined as the area between edges of pavement including the additional widening area as shown on the shoulder detail. (Detail R/2.18)

3. Local Road Shoulder Width for Zones one acre or larger = 4 feet, smaller than one acre = 6 feet.

<sup>(6)</sup>For all public roadways, refer to Article V, Section 5.6.C for Pavement Type considerations.

## **TABLE 2.01.02 - SUMMARY OF DESIGN CRITERIA - DESIGNATED URBAN AREAS**

This table shall be applied only in designated “Urban Areas.” Designations are determined by the Charles County Department of Planning & Growth Management.

| Urban Roadway Classification | Road Type                        | Direction of Traffic   | Parking Requirements <sup>(5)</sup> | Travel Lanes <sup>(4)</sup>       | ROW/ Esmt. Width (ft.) <sup>(4)</sup> | Pavement Width (ft.) <sup>(6)</sup> | Travel Lane Width (ft.) <sup>(2)(7)</sup> | Pedestrian Travel Way and Landscaping <sup>(1)(8)</sup> | Design Speed (mph) | Minimum Centerline Radius (ft.) | Maximum Grade (%) | Minimum Pavement Type | Detail No(s). |
|------------------------------|----------------------------------|------------------------|-------------------------------------|-----------------------------------|---------------------------------------|-------------------------------------|---|---|--------------------|---------------------------------|-------------------|-----------------------|---------------|
| Urban Major Collector        | Road, Drive                      | Two-way                | No on-street Parking                | 3 (Includes 12' Center Turn Lane) | 68                                    | 36                                  | 36  | 6' Landscaping + 8' Sidewalk (Both Sides)               | 35                 | 300                             | 8.0               | P-4                   | R/2.14.1      |
| Urban Minor Collector        | Road, Circle, Drive              | Two-way                | 1 - 8' Lane (One Side)              | 2                                 | 60/4                                  | 32                                  | 24  | 6' Landscaping + 8' Sidewalk (Both Sides)               | 30                 | 275                             | 10.0              | P-4                   | R/2.15.1      |
|                              |                                  |                        | 2 - 8' Lanes (Both Sides)           |                                   | 60/12                                 | 40                                  | 24  |   |                    |                                 |                   |                       |               |
| Urban Local Road             | Court, Street, Lane, Way, Avenue | One-way <sup>(3)</sup> | 1 - 8' Lane (One Side)              | 1                                 | 35                                    | 19                                  | 11  | 6' Landscaping + 6' Sidewalk (One Side)                 | 25                 | 125                             | 10.0              | P-3                   | R/2.16.1      |
|                              |                                  | Two-way                | 1 - 8' Lane (One Side)              | 2                                 | 50/8                                  | 30                                  | 22  | 6' Landscaping + 6' Sidewalk (Both Sides)               |                    |                                 |                   |                       |               |
|                              |                                  |                        | 2 - 8' Lanes (Both Sides)           | 2                                 | 50/16                                 | 38                                  | 22  |   |                    |                                 |                   |                       |               |
| Alley                        | Residential                      | Two-way                | 8' Lane where Provided              | 2                                 | 20                                    | 16                                  | 16  | -   | 20                 | 50                              | 10.0              | Table 2.07            | R/2.51        |
|                              | Commercial                       |                        |                                     |                                   | 24                                    | 20                                  | 20  |   |                    |                                 |                   |                       |               |

(1) Pedestrian Travel Way may be increased to accommodate outdoor dining, commercial use, and/or heavy pedestrian use.

(2) If bike lane(s) are required, refer to “AASHTO Guide for the Development of Bicycle Facilities” for design criteria. Additional right-of-way would be required for each direction.

(3) One-way roads may be used when they are planned and designated as part of a large roadway network

(4) Bus stop/bus pull-off area may be required as directed by the County.

(5) Required parking area is measured from face of curb (i.e. includes width of gutter pan). Parking requirement determined by Planning Division.

(6) Pavement width is measured from face of curb to face of curb (i.e. includes width of gutter pan for each direction).

(7) Gutter pan is not normally intended to be part of the travel lane. For dimensioning purposes, travel lane width includes width of gutter pan in each direction.

(8) Landscaping – refer to Table 2.09 of Road Ordinance

(9) For one-way urban local roads, the ADT range would be 0-400 vehicles per day. For all other roads, refer to Article VII, Section 72 of the Subdivision Regulations.

**TABLE 2.02****STOPPING SIGHT DISTANCE**

| <b><u>DESIGN SPEED (MPH)</u></b> | <b><u>DISTANCE (FEET)</u></b> |
|----------------------------------|-------------------------------|
| 20                               | 125                           |
| 25                               | 150                           |
| 30                               | 200                           |
| 35                               | 250                           |
| 40                               | 325                           |
| 45                               | 400                           |
| 50                               | 475                           |
| 55                               | 550                           |
| 60                               | 650                           |
| 65                               | 725                           |
| 70                               | 850                           |

Distance to be measured from height of eye of three (3) feet - six (6) inches to height of object at (6) six inches.

Source: Table III-1 of "A Policy on Geometric Design of Highways and Streets," (1990 - AASHTO)

**TABLE 2.03****MINIMUM INTERSECTION SPACING**

| <b><u>FUNCTIONAL CLASSIFICATION<br/>OF THROUGH ROAD</u></b> |            | <b><u>MINIMUM INTERSECTION SPACING<br/>(CENTERLINE TO CENTERLINE)</u></b> |
|---|------------|---|
| Principal Arterial  |            | To be in accordance with<br>MSHA Standards and Specs.                     |
| Intermediate Arterial:<br>Divided and Undivided             |            | 750'  |
| Minor Arterial:<br>Divided and Undivided                    |            | 750'  |
| Major Collector   | Urban      | 250'  |
|   | All Others | 500'  |
| Minor Collector   | Urban      | 200'  |
|   | All Others | 250'  |
| Local Road  | Urban      | 175'  |
|   | All Others | 200'  |

Minimum stopping sight distance shall be provided at all intersections. No proposed street shall be permitted to intersect an existing County road at a location that would result in undue interference with or hazard to the free movement of normal traffic.

**TABLE 2.04****MINIMUM LENGTHS OF VERTICAL CURVES**

| <b>ALGEBRAIC<br/>DIFFERENCE<br/>IN GRADES</b> | <b>LOCAL ROAD</b> |             | <b>MINOR<br/>COLLECTOR</b> |             | <b>MINOR ARTERIAL<br/>(BLVD) / MAJOR<br/>COLLECTOR</b> |             | <b>INTERMEDIATE<br/>ARTERIAL/<br/>MINOR ARTERIAL</b> |              |
|---|-------------------|-------------|----------------------------|-------------|--|-------------|--|--------------|
|   | <b>30 MPH</b>     |             | <b>35 MPH</b>              |             | <b>40 MPH</b>  |             | <b>50 MPH</b>  |              |
|   | <b>CREST</b>      | <b>SAG</b>  | <b>CREST</b>               | <b>SAG</b>  | <b>CREST</b>   | <b>SAG</b>  | <b>CREST</b>   | <b>SAG</b>   |
| <b>%</b>                                      | <b>K=30</b>       | <b>K=40</b> | <b>K=50</b>                | <b>K=50</b> | <b>K=80</b>  | <b>K=70</b> | <b>K=160</b>   | <b>K=110</b> |
| 2   | *100              | *100        | *100                       | *100        | 160  | 140         | 320  | 220          |
| 3   | *100              | 120         | 150                        | 150         | 240  | 210         | 480  | 330          |
| 4   | 120               | 160         | 200                        | 200         | 320  | 280         | 640  | 440          |
| 5   | 150               | 200         | 250                        | 250         | 400  | 350         | 800  | 550          |
| 6   | 180               | 240         | 300                        | 300         | 480  | 420         | 960  | 660          |
| 7   | 210               | 280         | 350                        | 350         | 560  | 490         | 1120   | 770          |
| 8   | 240               | 320         | 400                        | 400         | 640  | 560         | 1280   | 880          |
| 9   | 270               | 360         | 450                        | 450         | 720  | 630         | 1440   | 990          |
| 10  | 300               | 400         | 500                        | 500         | 800  | 700         | 1600   | 1100         |
| 11  | 330               | 440         | 550                        | 550         | 880  | 770         | 1760   | 1210         |
| 12  | 360               | 480         | 600                        | 600         | 960  | 840         | 1920   | 1320         |
| 13  | 390               | 520         | 650                        | 650         | 1040   | 910         | 2080   | 1430         |
| 14  | 420               | 560         | 700                        | 700         | 1120   | 980         | 2240   | 1540         |
| 15  | 450               | 600         | 750                        | 750         | 1200   | 1050        | 2400   | 1650         |
| 16  | 480               | 640         | 800                        | 800         | 1280   | 1120        | 2560   | 1760         |
| 17  | 510               | 680         | 850                        | 850         | 1360   | 1190        | 2720   | 1870         |
| 18  | 540               | 720         | 900                        | 900         | 1440   | 1260        | 2880   | 1980         |
| 19  | 570               | 760         | 950                        | 950         | 1520   | 1330        | 3040   | 2090         |
| 20  | 600               | 800         | 1000                       | 1000        | 1600   | 1400        | 3200   | 2200         |

\* = MINIMUM 100' VC

SOURCE: TABLE III-40 AND TABLE III-42 OF "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS," 1990 (AASHTO).

## **TABLE 2.05**

### **MINIMUM CURVATURE FOR TURNING MOVEMENTS**

| <b><u>STREETS INTERSECTING WITH<br/>STREETS CLASSIFICATION</u></b> | <b><u>TO HAVE A MINIMUM FILLET OR<br/>CURB RADIUS OF</u></b> |
|--|--|
| Principal Arterial   | To be in accordance with<br>MSHA Standards and Specs.        |
| Intermediate Arterial: Divided and Undivided                       | 30'  |
| Minor Arterial: Divided and Undivided                              | 30'  |
| Major Collector  | 25'  |
| Minor Collector  | 25'  |
| Local Road   | 20'  |

The above radii are based on intersections having a 90-degree turning angle.

Alleys, within an urban area where space is not available to permit the required intersection radius, a minimum radius of five feet will be used.

Intersection radius shall terminate no less than five feet from any adjoining property line.

Private driveways shall be in accordance with the Standard Details.

Minimum radii to be used for both open and closed sections.

Minimum radii for roads in industrial and commercial areas shall be thirty (30) feet.



**TABLE 2.06****SIGHT DISTANCE AT INTERSECTION**

| <b><u>DESIGN SPEED (MPH)</u></b> | <b><u>REQUIRED SIGHT DISTANCE</u></b> |
|----------------------------------|---------------------------------------|
| 25 OR LESS                       | 200 feet                              |
| 30                               | 300 feet                              |
| 40                               | 400 feet                              |
| 50                               | 500 feet                              |
| 55                               | 550 feet                              |

Based on a 3.50' eye height to a 4.25' object height.

**TABLE 2.07****PAVEMENT DETAIL**

| <b><u>SECT.<br/>NO.</u></b> | <b><u>PAVEMENT MATERIAL</u></b>  | <b><u>ROAD CLASSIFICATION</u></b>  |
|-----------------------------|--|--|
| <b>P-1</b>                  | 9" Bank Run Gravel<br>2" Hot Mix Asphalt Base Superpave 12.5 mm, PG64-22<br>1 ½" Hot Mix Asphalt Final Surface Superpave 9.5 mm, PG64-22   | Commercial/Industrial:<br>Parking Areas,<br>Drive Aisles and Alleys                        |
| <b>P-2</b>                  | 8" Bank Run Gravel<br>2" Hot Mix Asphalt Base Superpave 12.5 mm, PG64-22<br>1" Hot Mix Asphalt Intermediate Surface Superpave 9.5 mm, PG64-22<br>1 ½" Hot Mix Asphalt Final Surface Superpave 9.5 mm, PG64-22                | Local Road, Mobile Home<br>Parks, Single Family Attached,<br>Townhouse, Residential Alleys |
| <b>P-3</b>                  | 8" Bank Run Gravel<br>3" Hot Mix Asphalt Base Superpave 19 mm, PG64-22<br>1" Hot Mix Asphalt Intermediate Surface Superpave 9.5 mm, PG64-22<br>1 ½" Hot Mix Asphalt Final Surface Superpave 9.5 mm, PG64-22                  | Minor Collector<br>(Residential Zones)   |
| <b>P-4</b>                  | 8" Bank Run Gravel<br>4" Hot Mix Asphalt Base Superpave 12.5 mm, PG64-22 (two lifts)<br>1" Hot Mix Asphalt Intermediate Surface Superpave 9.5 mm, PG64-22<br>1 ½" Hot Mix Asphalt Final Surface Superpave 9.5 mm, PG70-22    | Minor Collector<br>(Commercial Industrial Zones),<br>Major Collector                       |
| <b>P-5</b>                  | 10" Bank Run Gravel<br>4 ½" Hot Mix Asphalt Base Superpave 12.5 mm, PG64-22 (two lifts)<br>1" Hot Mix Asphalt Intermediate Surface Superpave 9.5 mm, PG64-22<br>1 ½" Hot Mix Asphalt Final Surface Superpave 9.5 mm, PG70-22 | Minor Arterial   |
| <b>P-6</b>                  | 10" Bank Run Gravel<br>5 ½" Hot Mix Asphalt Base Superpave 19 mm, PG64-22 (two lifts)<br>1" Hot Mix Asphalt Intermediate Surface Superpave 9.5 mm, PG64-22<br>1 ½" Hot Mix Asphalt Final Surface Superpave 9.5 mm, PG70-22   | Intermediate Arterial  |

**SHOULDER SECTION**

|            |  |                                  |
|------------|--|----------------------------------|
| <b>P-7</b> | 3" Hot Mix Asphalt Surface Superpave 19 mm, PG64-22<br>Bank Run Gravel (see Note #2) | For all Roads (refer Sec. 3.4.E) |
|------------|--|----------------------------------|

**Notes:**

1. Special asphalt equivalent sections may be substituted pending written request and review/approval by the County Engineering staff.
2. The bottom of bank run gravel for shoulder shall be in line and grade with roadway subbase.
3. The intermediate surface course layer must be placed within two weeks of the placement of the base course. The placement of intermediate surface course is required prior to substantial completion inspection and auto bond reduction.
4. Prior to placement of the asphalt, all manholes and utility valve boxes located in the roadway must be set at finished grade. At time of placement, the intermediate surface course layer must be ramped up to the tops of the structures to provide for a smooth transition. Immediately prior to final surface course paving, the intermediate surface asphalt ramped around the structures must be removed to allow for the placement of the full 1 ½" thickness required.
5. In lieu of placing the 1-inch intermediate surface course layer for Commercial/Industrial entrance aprons within the County right-of-way where auxiliary lanes are not required, the one inch of pavement can be added to the required thickness of the base asphalt layer.
6. Asphalt layers shall be placed in appropriate lift thicknesses. Single lift thickness not to exceed three and one-half inches.

**TABLE 2.08****TREE SUPPORT SCHEDULE**

| <b>Tree<br/>Size<br/>Height</b> | <b>Tree Size<br/>Caliper</b> | <b>Stake</b>        | <b>#</b> | <b>Wire or<br/>Cable</b> | <b>Turnbuckle</b> | <b>Hose</b> |
|---------------------------------|------------------------------|---------------------|----------|--------------------------|-------------------|-------------|
| 6' - 8'                         | 1 - 1 ½"                     | 5' Upright          | 2        | 14 gauge<br>wire         | -                 | ½"          |
| 8' - 10'                        | 1 ½ - 2"                     | 5' or 6'<br>Upright | 2        | 14 gauge<br>wire         | -                 | ½"          |
| 10' - 12'                       | 2 - 2 ½"                     | 7 or 8'<br>Upright  | 2        | 14 gauge<br>wire         | -                 | ½"          |
| 12 - 14'                        | 2 ½ - 3"                     | 2' Guy              | 3        | 12 gauge<br>wire         | -                 | ½"          |
| 14 - 16'                        | 3 - 4"                       | 2' Guy              | 3        | 12 gauge<br>wire         | -                 | ¾"          |
| 16 - 20'                        | 4 - 6"                       | 30" Guy             | 3        | 12 gauge<br>wire         | -                 | ¾"          |
| 20' &<br>over                   | 6" & over                    | Deadman             | 3        | 3/16"<br>Cable           | 3/8 x 6"          | ¾"          |

**TABLE 2.09****RECOMMENDED LIST OF TREES FOR STREET PLANTING\***

| <b><u>BOTANICAL NAME</u></b><br><b><u>WIDTH</u></b> | <b><u>COMMON NAME</u></b>                | <b><u>TREE</u></b> | <b><u>LAWN</u></b> |
|---|--|--------------------|--------------------|
| Acer buergeranum                                    | Trident Maple                            |                    | 2 to 4 feet        |
| Acer campestre                                      | Hedge Maple                              |                    | 4 to 6 feet        |
| Acer campestre 'Evelyn'                             | Queen Elizabeth Hedge Maple              |                    | 4 to 6 feet        |
| Acer Ginnala Tree Form                              | Amur Maple                               |                    | 2 to 4 feet        |
| Acer griseum  | Paperbark Maple                          |                    | 4 to 6 feet        |
| Acer nigrum 'Greencolumn'                           | Greencolumn Black Maple                  |                    | more than 6 feet   |
| Acer rubrum   | Red Maple                                |                    | more than 6 feet   |
| Acer saccharum                                      | Sugar Maple                              |                    | more than 6 feet   |
| Acer tataricum                                      | Tatarian Maple                           |                    | 2 to 4 feet        |
| Acer x freemanii                                    | Freeman Maple                            |                    | more than 6 feet   |
| Amelanchier arborea, A. canadensis,                 | Serviceberry                             |                    | 2 to 4 feet        |
| Carpinus betulus 'Fastigiata' Tree Form             | Fastigate European Hornbeam              |                    | 4 to 6 feet        |
| Carpinus caroliniana Tree Form                      | American Hornbeam                        |                    | 4 to 6 feet        |
| Celtis occidentalis                                 | Hackberry                                |                    | more than 6 feet   |
| Cercidiphyllum japonicum Tree Form                  | Katsura Tree                             |                    | more than 6 feet   |
| Cercis canadensis Tree Form                         | Eastern Redbud                           |                    | 2 to 4 feet        |
| Cornus florida                                      | Flowering Dogwood                        |                    | 2 to 4 feet        |
| Cornus kousa Tree Form                              | Kousa Dogwood                            |                    | 2 to 4 feet        |
| Crataegus crus-galli var, inermis                   | Thornless Cockspur Hawthorn              |                    | 2 to 4 feet        |
| Crataegus phaenopyrum                               | Washington Hawthorn (tree form)          |                    | 2 to 4 feet        |
| Fraxinus americana                                  | White Ash                                |                    | more than 6 feet   |
| Fraxinus pennsylvanica                              | Green Ash**                              |                    | more than 6 feet   |
| Ginkgo biloba                                       | Ginkgo or Maidenhair Tree                |                    | more than 6 feet   |
| Gleditsia triacanthos                               | Honeylocust**                            |                    | more than 6 feet   |
| Glymnocladus diocius                                | Kentucky Coffeetree                      |                    | more than 6 feet   |
| Koeleruteria paniculata                             | Goldenrain Tree                          |                    | 4 to 6 feet        |
| Liquidambar styraciflua                             | Sweetgum                                 |                    | more than 6 feet   |
| Liriodendron tuliptree                              | Tuliptree                                |                    | more than 6 feet   |
| Malus 'snowdrift'                                   | Snowdrift Crabapple                      |                    | 2 to 4 feet        |
| Nyssia sylvatica                                    | Blackgum or Black Tupelo**               |                    | more than 6 feet   |
| Ostrya virginiana Tree Form                         | American Hophornbeam                     |                    | 4 to 6 feet        |
| Phellodendron amurense                              | Corktree                                 |                    | 4 to 6 feet        |
| Platanus x acerifolia 'Bloodgood'                   | Bloodgood London Planetree               |                    | more than 6 feet   |
| Prunus sargentii                                    | Sargent Cherry Tree                      |                    | 4 to 6 feet        |
| Prunus serrulata 'Amanogawa'                        | Amanogawa Oriental Cherry                |                    | 2 to 4 feet        |
| Prunus virginiana 'Shubert' Tree Form               | Shubert Chokecherry of Canada Red Cherry |                    | 2 to 4 feet        |
| Pyrus calleryana 'Whitehouse'                       | Whitehouse Callery Pear                  |                    | 4 to 6 feet        |
| Pyrus calleryana 'Capital'                          | Capital Callery Pear                     |                    | 4 to 6 feet        |
| Quercus bicolor                                     | Swamp White Oak**                        |                    | more than 6 feet   |
| Quercus palustris                                   | Pin Oak                                  |                    | more than 6 feet   |
| Quercus phellos                                     | Willow Oak                               |                    | more than 6 feet   |
| Quercus rubra                                       | Northern Red Oak                         |                    | more than 6 feet   |
| Sophora japonica                                    | Pagodatree or Scholartree                |                    | more than 6 feet   |
| Syringa reticulata 'Ivory Silk'                     | 'Ivory Silk' Japanese Tree Lilac         |                    | 2 to 4 feet        |
| Taxodium distichum                                  | Baldcypress                              |                    | more than 6 feet   |
| Tilia cordata                                       | Littleleaf Linden**                      |                    | more than 6 feet   |
| Tilia tomentosa                                     | Silver Linden                            |                    | more than 6 feet   |
| Ulmus parvifolia                                    | Chinese Elm**                            |                    | more than 6 feet   |
| Zelkova serrata                                     | Japanese Zelkova                         |                    | more than 6 feet   |

**Notes:**

All trees must be a minimum of 1 ½" caliper when planted (diameter of trunk measured from earth ball). All tree species must meet American Association of Nurserymen Standards for the types and sizes specified. Trees are to be staked or guyed and guaranteed for two full years. Planting area and backfill mix shall be per MSHA Specification 710.03.04 and 710.03.05.

A certificate of compliance from a Landscape Architect, registered in the State of Maryland shall be submitted to the County Highway Engineer by the owner/developer of the project prior to bond release. The certification shall state that the type and location of all planted street trees are in accordance with the Road Ordinance, Standard Detail Manual, and/or approved construction plan.

\* Any tree species not appearing on this list must receive approval by the County.

\*\* Indicates salt tolerant trees, recommended for use near tidal waters or where heavy use of road salt may occur.

**TABLE 2.10****MINIMUM PASSING SIGHT DISTANCE FOR 2-LANE RURAL  
MAJOR COLLECTORS AND MINOR ARTERIALS**

| <b><u>DESIGN SPEED (mph)</u></b> | <b><u>MINIMUM PASSING SIGHT DISTANCE (feet)</u></b> |
|----------------------------------|---|
| 40                               | 1500  |
| 45                               | 1700  |
| 50                               | 1800  |
| 55                               | 2000  |
| 60                               | 2100  |

**Source:** "A Policy on Geometric Design of Highways and Streets," 1990 (AASHTO)

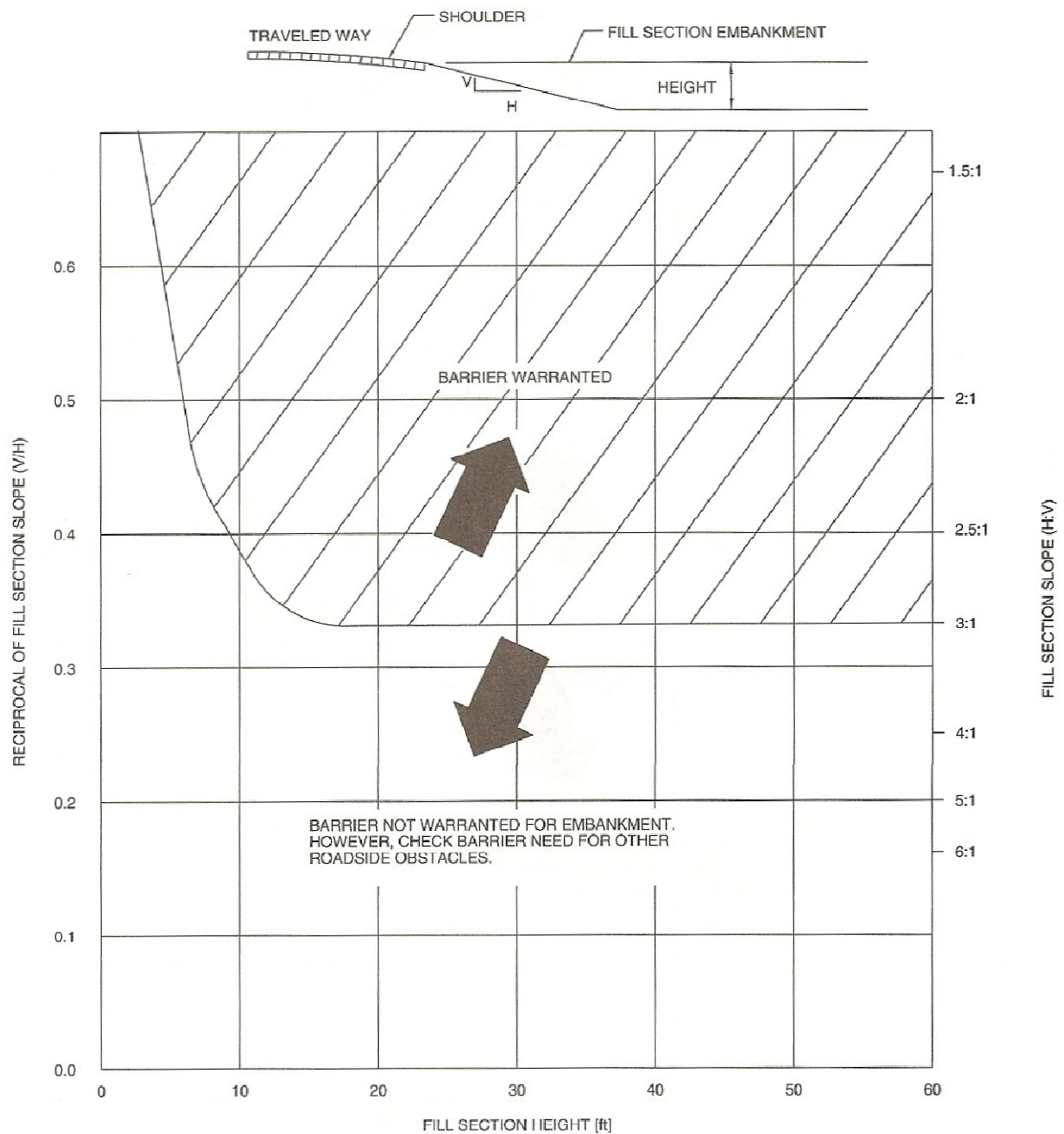
Passing sight distance is measured between an eye height of 3.5 feet and an object height of 4.25 feet.

**TABLE 2.11****MINIMUM LENGTHS OF AUXILIARY LANES****DECELERATION LANES**

| <b>DESIGN SPEED OF<br/>HIGHWAY<br/>(MPH)</b> | <b>LENGTH OF TAPER<br/>(FEET)</b> | <b>DECELERATION LANE<br/>EXCLUDING TAPER<br/>(FEET)</b> |
|--|-----------------------------------|---|
| 40   | 150                               | 250   |
| 50   | 200                               | 350   |
| 60   | 250                               | 450   |

**ACCELERATION LANES**

| <b>DESIGN SPEED OF<br/>HIGHWAY<br/>(MPH)</b> | <b>LENGTH OF TAPER<br/>(FEET)</b> | <b>ACCELERATION LANE<br/>EXCLUDING TAPER<br/>(FEET)</b> |
|--|-----------------------------------|---|
| 40   | 150                               | 100   |
| 50   | 150                               | 100   |
| 60   | 150                               | 100   |

**APPENDIX "B"**

SOURCE: FIGURE 5.1B OF THE "ROADSIDE DESIGN GUIDE" (2006) – AASHTO, REF. #9

**CHARLES COUNTY  
GOVERNMENT**  
DEPARTMENT OF CODES, PERMITS AND  
INSPECTION SERVICES

**GUARDRAIL  
REQUIRED FOR  
EMBANKMENT  
GEOMETRY**



## **APPENDIX "C"**

### **STANDARDS AND GUIDELINES FOR TRAFFIC SIGNS AND MARKINGS IN NEW SUBDIVISIONS**

Street names and traffic control devices shall be erected at each street intersection in the location designated by the County at the expense of the subdivider or developer, and shall conform with the county code and design manual and shall be approved by the County.

The developer shall be responsible for the material and labor costs in connection with installing all traffic signs on new streets within the development. He shall also be responsible for all maintenance costs incurred prior to acceptance of the street into the public street system. The cost of installing any traffic signs or markings on existing county roads or streets that may be required as a result of the development will be borne by the Developer.

#### **Procedure**

The developer shall submit the signing and marking layouts to the County for review and approval. Upon approval, the developer shall install the traffic signs at his own expense. The markings and street name signs will be installed by the developer, at the expense of the developer.

## **APPENDIX "D"**

### **MAINTENANCE OF TRAFFIC**

When designing either an improvement of an existing road or a completely new road, consideration must be given to maintaining traffic during construction. The high traffic volumes often found in areas of construction, coupled with what is normally a long construction period, can result in a complex problem which can make an otherwise acceptable design infeasible. The maintenance of traffic, therefore, must be carefully studied during the design process.

Three methods of maintaining traffic are available. The first is to stage construction so that the existing facility can be used to accommodate traffic during construction. A four-lane highway, for example, can often be reconstructed by working on no more than two lanes concurrently. During peak periods, it may be necessary to remove equipment and open more than two lanes.

The second means of maintaining traffic is to divert it to adjacent streets over detour routes using existing roadways. One-way patterns, limitation of parking and certain turning movements, rerouting of transit routes, and coordinating signals are some of the means by which such a transfer can be successfully accomplished.

Where traffic cannot be satisfactorily accommodated by the first two methods, construction of temporary detour routes will be necessary. An example is the construction of a new bridge over a stream to replace the existing structure with no change in the road alignment. This situation would require a temporary runaround detour road either over other existing roads in the area or via a specially constructed temporary roadway.

As each construction project is somewhat different than any other, no set rules can be given governing the development of the maintenance of traffic plan. Certain principles, however, apply to all situations.

The three means of maintaining traffic should be studied and a plan developed utilizing some combination thereof. Traffic volumes and speeds, capacities of existing roads, the existing street pattern, availability of land for detour routes, and scheduling of construction activities are among the factors that must be considered.

The roadway, whether in a construction area or a detour, shall be satisfactory to accommodate traffic at a reasonable speed, which is dependent upon speed approaching the roadway and length of project, but normally not less than 30 m.p.h.

Where rail traffic is interrupted, the railroad affected shall be contacted and a maintenance of traffic plan developed which is acceptable to both the railroad and the County.

The signing and marking of all roadways associated with maintenance of traffic shall be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways (ref. 4).

The complete maintenance of traffic plan, including but not limited to the schedule of construction operations as related to traffic maintenance, the number and widths of lanes to be open during various periods of the day, and the alignment, grade, typical section, and construction details of temporary detour roads, shall be included in the contract documents.

Where pedestrians will be affected by road construction, provisions shall be made for them in a manner similar to that for vehicles.

The maintenance of traffic plan is subject to review and approval by the County.

## **APPENDIX "E"**

### **CHARLES COUNTY ORDINANCE FOR THE NAMING AND RENAMING OF STREETS AND THE ASSIGNMENT OF ADDRESS NUMBERS**

#### **ARTICLE I - PURPOSE AND AUTHORITY**

- 1.0 Purpose:** The purpose of this regulation is to establish a system for the assignment of street names and numbering of houses in Charles County, thus eliminating the confusion and potential hazards to public safety which might otherwise exist.
- 1.1 Authority:** These regulations are based on the statutory authority contained in Article 66B, Code of Public General Laws of Maryland, May 1971, as amended.

#### **ARTICLE II - APPLICATION, EFFECTIVE DATE, AND TERRITORIAL LIMITS**

- 2.0** This regulation shall take effect immediately after adoption and shall apply to Charles County. In no case, however, shall any provision of this regulation be deemed applicable with the incorporated territory of any municipality in the County.

#### **ARTICLE III - GRID ADDRESS NUMBERING SYSTEM**

- 3.0** Generally, the County will effect and retain a uniform systematic house numbering system throughout the County which will promote continuity, avoid duplications, and eliminate house renumbering. This system will be established and known as the "Grid Address Numbering System."
- 3.1** When possible, continuity of house number hundred blocks will be maintained when streets enter the County from Incorporated Towns within the County.
- 3.2** Street Directions, when traveling south on a north-south street, the odd numbers will be on the right side and even numbers on the left. When traveling east on an east-west street the odd numbers will be on the right side and even numbers on the left.
- 3.3** On a street which changes direction, it will be numbered consecutively from beginning to end. It will not conform to the Grid Address Numbering System.
- 3.4** On a one-intersection circular street, the house number hundred block will be determined by the direction of the majority of other streets in the immediate area.
- 3.5** Criteria for Determining House Numbers: To reduce the frequency of errors, duplications, and renumbering, the following principles of house numbering procedures will be followed to the degree possible.

- A. When it is apparent that re-subdividing may take place due to lot sizes on the same street side, a sufficient quantity of house numbers should be reserved for the vacant areas between structures to permit assignment of numbers for any future development or improvement thereon.
- B. Structures facing each other on the opposite side of the same street should be assigned numbers in relation to each other. That is: 6 facing 5 or 7, 5 facing 4 or 6; and in the instance where a structure fronts off the inside curvature of a street and faces more than one structure fronting off the outside curvature of same street: 6 between 5 and 7, or 7 between 6 and 8. This will also apply when there are more structures on one side of the street than the opposite side due to variances of lot sizes.
- C. Suffixes such as "A" or "½" to house number digits will not be permitted. However, when a single-entrance structure has more than one floor comprising of other offices or places of business, suite numbers may be added after the house number assigned to that structure. EXAMPLE: 1111 Planner Drive, Suite 201. This will also apply to a basement used in the same manner. In the case of a single-entrance place of business with apartments overhead or alongside, numbers may be used after the house number assigned to the structure. EXAMPLE: 2222 Planner Drive, Apartment 2.
- D. Structures with multiple entrances shall be assigned a house number for each separate entrance. This will also apply to bays in a warehouse. When a large, single-entrance warehouse is erected, located, or situated on a parcel of land, a sufficient quantity of house numbers should be reserved between other structures on the same street for possible partitioning into additional bays for which house numbers may be required. Rear entrances of multiple-entrance structures, such as strip shopping centers, bays, and apartments, shall display the assigned number that was given for the front or main entrance.
- E. Each store in a shopping center will be assigned its own house number. However, a sufficient quantity of house numbers will be reserved for each store or office in excess of twenty-foot widths to permit future assignment of house numbers if any of the stores or offices therein are partitioned to establish other places of business.
- F. Structures on parcels of land fronting on more than one street will be assigned a number according to location of driveway. However, parcels of land with frontage on a public or private road and driveway access to an alley will be assigned a number along the road in which the front door or main entrance faces. A house number should be reserved along each street on which the parcel faces to provide for the assignment changes or additions to the structure thereon.
- G. Structures on parcels of land fronting on more than one street containing a circular driveway from street to street will be assigned a number along the street in which the front door or main entrance faces. If the front entrance cannot be determined, an address will be assigned according to the main street.

- 3.6** Assignment of House Numbers: Each residential, commercial, or industrial structure erected, located, or situated on a parcel of land in the County will be assigned a house number based on the Grid Address Numbering System.
- 3.7** The two major sources from which information is received for assignment of new house numbers are the Subdivision Record Plats and Building Permits.
- 3.8** Notification of Assignments of House Numbers: The owner or occupant of a structure erected, located, or situated on a parcel of land for which a house number has been assigned will be notified by the County.
- 3.9** In addition to the property owner, developers, builders, electricians, and plumbers; engineering, real estate, and mortgage firms may be given this information upon submission of a record plat--or site plan--showing legal descriptions of property for particular house numbers in which they are interested.
- 3.10** Changes to Existing House Numbers will be done whenever errors in assignment are discovered.
- 3.11** The following procedures will be followed to the degree possible, consistent with good judgement and common sense, when house numbers in those areas of the County do not conform to the Grid Address Numbering System.
- A.** Conduct a street-by-street survey of house number hundred blocks. Where house number changes are necessary, they will be made to coincide with any street name changes which have to be made in that area.
- 3.12** Whenever a house number is to be changed, an official notification of each proposed change will be mailed to the occupant and/or owner of property being renumbered, indicating the new number.
- 3.13** Owners and/or occupants of structures on streets scheduled only for renumbering will be afforded sufficient time for them to make necessary adjustments.
- 3.14** Records: A record of each house number assigned or changed will be entered on applicable maps or other media as may be employed for such records and maintained on a continuing and permanent basis.

#### **ARTICLE IV - STREET NAMES**

- 4.0** Origin of Street Names: The County shall assign or approve all names of existing or proposed rights-of-way. Within the limits of Incorporated Towns, the County will coordinate street naming with the appropriate town agency.
- 4.1** Owners of land, or occupants or owners of structures erected thereon, fronting on an existing unnamed right-of-way may petition for naming of that street in accordance with paragraph 4.3.C below.

- 4.2** Any existing or proposed unnamed public or private right-of-way providing access to more than one dwelling will be provided a name in accordance with paragraph 4.3.B below. In certain cases, the County, in its sole discretion, reserves the right to determine whether or not a private right-of-way shall be named.
- 4.3** Selection of Street Names: To eliminate unacceptable duplication of street names and to effect a uniform system of naming or renaming streets, the County will adhere to the following principles of street name procedures to the degree possible:
- A.** An extension of an existing right-of-way will bear the same name as that assigned when previously dedicated to the public.
  - B.** Any street name assigned by the County to an existing or proposed right-of-way will not be duplicated in name, either in sound or spelling, of any street name already existing in the County.
  - C.** Street names selected by owners, developers, or occupants of structures fronting on existing or proposed right-of-ways must be approved by the County to avoid duplicating street names. Proposed street names may be submitted to the County by one of the following methods:
    - 1.** Petition signed by more than 50% of those residing on the street;
    - 2.** Selected names shown on an approved preliminary subdivision plat;
    - 3.** Written requests for reservation of selected names.
  - D.** Road names assigned are to aid in the response of emergency services throughout the County, once assigned, names will not be changed unless the petitioner can prove significant hardship.
  - E.** A one-intersection circular street will bear one name.
  - F.** When practicable, those named rights-of-way entering the County from Prince George's, St. Mary's, Calvert County, or incorporated towns will bear a different name.

The County will periodically evaluate the effectiveness of this section by conducting a survey of all streets in the County to determine if any street names are duplicated in sound or spelling. The duplicated street name(s), if any, with the fewest residents fronting thereon may be changed.

**ARTICLE V - IDENTIFICATION OF PROPERTIES/BUILDINGS**

- 5.0** Identification of Properties and Buildings: The owners of all properties or principal buildings within the County shall number and maintain the numbers of such buildings in accordance with the Grid Address Numbering System adopted in this ordinance. All numbers shall consist of plain legible figures placed in a conspicuous place or places on the building facing the street from which the building is numbered. When numbers on the buildings are not readily visible from the street, auxiliary numbers will be placed on a sign near the street as necessary, with direction arrows to assure rapid approach to each building.

**ARTICLE VI - POSTING OF NUMBERS**

- 6.0** Posting Numbers: Numerals indicating the official numbers for each principal building or each front entrance to the building shall be posted in the following manner.
- A.** Each number shall consist of not less than three-inch high Arabic numerals contrasting in color to the structure on which they are mounted, affixed in such a way as to be located within five feet of the entrance. In those cases where the entrance numbers are not visible from the street, additional numbers shall be installed on the building or on auxiliary signs in such a manner as to be visible from the street.
  - B.** Building numbers will be a minimum of three inches high for locations up to fifty feet from the curb or pavement edge. For each additional twenty-five feet of setback beyond the initial fifty feet of setback, the numbers shall increase in size by one inch in height. For buildings over 150 feet from the curb, auxiliary signs shall be installed.
  - C.** During construction, all buildings/dwellings shall display the County assigned address on an auxiliary sign posted on the property visible from the road. The auxiliary sign may be removed on when the building/dwelling is marked as noted in 6.0.A and 6.0.B.

**ARTICLE VII - DUTY OF OWNERS**

- 7.0** Duty of Owners: Whenever any principal building shall be erected or located in the County, in order to preserve the continuity and uniformity of the numbering system and numbers of buildings and properties, it shall be the duty of the owner to procure the correct number, as designated, and immediately fasten the number upon the building.

**ARTICLE VIII - DEFACING OF PROPERTY**

- 8.0** Defacing, Etc., Numbers: No person shall deface or remove a number placed upon a principle building in accordance with this ordinance.

**ARTICLE IX - COMPLIANCE WITH ORDINANCE**

- 9.0** Compliance with Ordinance: No owner of real property shall attempt to number or fail to number the property or the principle building thereon, if not in conformity with this ordinance. The County shall send a written notice, by first-class mail, to any owner not in compliance with this ordinance, to the owner's address as stated in the records of the county, directing specific compliance with any provision of this ordinance; and the failure or refusal of such owner, within ten days of such notice, to comply with the directives stated therein shall constitute a violation of this ordinance.

**ARTICLE X - PENALTIES**

- 10.0** Penalties: The violation of Section 9.0 shall be punished for a first offense by a fine of \$25.00 and for each subsequent offense committed within a period of twelve months by a fine not to exceed \$100.00.

**ARTICLE XI - CHANGES AND AMENDMENTS**

- 11.0** Changes and Amendments: These regulations may from time to time be amended or repealed by the County Commissioners. Any person or officer, department, board, commission, or bureau of the County may petition for such change or amendment; however, no such change or amendment shall become effective until after a public hearing in relation thereto, at which parties in interest and citizens shall have an opportunity to be heard. At least fifteen days notice of the time and place of such hearing shall be published in a newspaper of general circulation in the County.

**ARTICLE XII - APPEAL PROCEDURES**

- 12.0** Appeal: Under provisions of Article 66B of the Annotated Code of Maryland any person or persons jointly or severally aggrieved by a decision of the Commission, or any taxpayer, or any officer, department, Board, or Bureau of the County may appeal the same to the Charles County Circuit Court in a manner as set forth in Chapter 1100, Subtitle B, of the Maryland Rules. The decision of the Circuit Court may be appealed to the Maryland Court of Appeals.



## **APPENDIX "F"**

### **ACCESS MANAGEMENT TABLES**

The following tables designate access point locations for existing and future development. The location of access points are designated by “Station” from the design/construction plans for the subject roadway segment. Individual properties are identified in the “Comments” column to determine the location of the associated access point. The table illustrates whether the access point is designated as a right-in/right-out or a median break.

#### **Access Tables:**

|            |  |
|------------|--|
| Table F.1  | Cross County Connector - US 301 to St. Charles Parkway (Designed as a four-lane arterial roadway)            |
| Table F.2  | Cross County Connector - St. Charles Parkway to Piney Church Road (Designed as a four-lane arterial roadway) |
| Table F.3  | Cross County Connector - Piney Church Road to MD 5 (Designed as a four-lane arterial roadway)                |
| Table F.4  | Cross County Connector - US 301 to Saint Patrick’s Drive (Designed as a four-lane arterial roadway)          |
| Table F.5  | Cross County Connector - Saint Patrick’s Drive to Middletown Road (Designed as a four-lane arterial roadway) |
| Table F.6  | Cross County Connector - Middletown Road to MD 229 (Designed as a four-lane arterial roadway)                |
| Table F.7  | Cross County Connector - MD 229 to Prince Edward Drive (Designed as a four-lane arterial roadway)            |
| Table F.8  | Cross County Connector - Prince Edward Drive to MD 210 (Designed as a four-lane arterial roadway)            |
| Table F.9  | Middletown Road - MD 228 to Billingsley Road (Designed as a four-lane arterial roadway)                      |
| Table F.10 | Rosewick Road - US 301 to St. Charles Parkway (Designed as a four-lane arterial roadway)                     |
| Table F.11 | St. Charles Parkway - Billingsley Road to Rosewick Road (Designed as a four-lane arterial roadway)           |
| Table F.12 | Western Parkway - MD 228 to Mattawoman Drive (Designed as a four-lane arterial roadway)                      |

**TABLE F.1 CROSS COUNTY CONNECTOR - US 301 TO ST. CHARLES PARKWAY**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment   |
|--------------|----------------|---------------------------|---------------------|---|
| A            | Yes (existing) | N/A                       | 70+77               | U.S. 301 Intersection   |
| B1           | No             |                           | 68+00               | MD 925 (existing entrance)  |
| B2*          | No             |                           | 68+00               | Wasson & Watson   |
| B3           | No             |                           | 65+20               | Wasson (south side)   |
| C            | Yes (existing) | 752                       | 63+25               | Crossover for U turns & church entrance - north side  |
| C1           | No             |                           | 59+85               | SMECO access point  |
| C2           | No             |                           | 56+32               | Washington Gas, temporary access point, to be relocated   |
| D1 & D2      | Yes            | 825                       | 55+00               | Median opening; to serve St. Charles Middle Business Park (SCMBP)   |
| E3           | No             |                           | 45+73               | Richards Access Point (existing)  |
| E4 & E5      | Yes            | 1,500                     | 40+00               | Median Opening to serve development on north and south side, and future connection to Graphics Drive (via south side) |
| F            | No             |                           | 32+35               | Existing Graphics Drive (south side); Right-in-out only   |
| G            | No             |                           | 29+20               | Existing Changing Point entrance (north side); Right-in-out only  |
| H            | Yes            | 1,500                     | 25+00               | Median Opening; south side only to serve business development (SCMBP service road to point I)                         |
| I            | Yes            | 1,250                     | 12+50               | Median Opening; south side only; approximately half-way between 25+00 and 1+00 (SCMBP Service Road to point H)        |
| J1           | No             |                           | 4+50                | Access Point to Parcel 95   |
| J2           | No             |                           | 4+75                | Access point to SCMBP Lot D 14  |
| K            | Yes (existing) | 1,150                     | 1+00=0+00           | Intersection with St. Charles Parkway   |

Notes: 1. Ravenglass Road will not be extended south to Cross County Connector.

2. Station equality: St. Charles Pkwy 0+00, Phase 2A=1+00 Phase 2B

\* At the time of approval of access points on US 301 and point B3, the access point B2 (existing cul-de-sac station 68+00), shall be closed.

**TABLE F.2      CROSS COUNTY CONNECTOR - ST. CHARLES PARKWAY TO PINEY CHURCH ROAD**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment  |
|--------------|----------------|---------------------------|---------------------|--|
| K            | Yes (existing) | 1,150                     | 1+00=0+00           | St. Charles Parkway  |
| L1           | No             |                           | 7+50                | Access point, north side, for Fairway Village Apartments   |
| L2           | No             |                           | 7+50                | Intersection or access point; South end; Right-in-out only   |
| M1 & M2      | Yes            | 1,500                     | 15+00               | Median Opening   |
| N            | No             |                           | 22+50               | Intersection or access point; Right-in-out south side only; no median opening  |
| O1 & O2      | Yes            | 1,500                     | 30+00               | Median opening; Provides public access for "Drive F" (north side) and possible public access for south side (Parcel 'F-F' as indicated on St. Charles Fairway Village, Gleneagles Neighborhood Preliminary Plan) |
| Q            | Yes            | 1,300                     | 43+00               | Median opening with T-intersection (south side); half way between O1 & O2 and R  |
| R            | Yes (existing) | 1,300                     | 56+00               | Possible/probable location of Relocated Piney Church Road  |

Note:    Parcels with frontage on Piney Church Road (a lower classification road) shall seek access from that road instead of the Cross County Connector.

**TABLE F.3 CROSS COUNTY CONNECTOR - PINEY CHURCH ROAD TO MD 5**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment   |
|--------------|----------------|---------------------------|---------------------|---|
| R            | Yes (existing) | 1,300                     | 56+00               | Piney Church Road intersection  |
| T            | Yes            | 1,225                     | 68+25               | Median Opening (for school)   |
| U1 & U2      | Yes            | 1,225                     | 80+50               | Median Opening  |
| V1 & V2      | Yes            | 2,127.5                   | 101+77.5            | Median opening with a public intersection (south side); Will allow access to the main loop road (west end) for the Piney Reach Business Park              |
| W1 & W2      | Yes (existing) | 1,144.5                   | 113+22=<br>11+25    | Median opening (Existing) - Entrance to the Charles County Landfill to the south and the private road access to Charles County Asphalt plant to the north |
| X            |                |                           | 24+50               | Intersection or access point (1,325 feet from 11+25; Piney Reach Tract 5 is on the north side)  |
| Y1 & Y2      | Yes            | 2,225                     | 33+50               | Median opening with a public intersection (south side); Will allow access to the main loop road (east end) for the Piney Reach Business Park              |
| Z1           | Yes            | 1,540                     | 48+90               | Access point for Tract 5B   |
| Z4           | Yes            | 1,500                     | 63+90               | Median opening  |
| Z5           |                |                           | 76+87               | Intersection or access point; South side only (right-in-right-out)  |
| Z6           | Yes (existing) | 1,650                     | 80+40               | Median opening (existing left-in only from Billingsley Road) Nursery (north side)   |
| Z7           | Yes (existing) | 433                       | 84+73               | Intersection with Maryland Route 5  |

- Notes:**
1. The Piney Reach Business Park general development plan was used in determining some of the preceding locations (e.g. The loop road around the landfill).
  2. Existing median opening at sta. 68+30 to be closed.
  3. Station equality: station 116+97.03 = station 15+00.

**TABLE F.4 CROSS COUNTY CONNECTOR - US 301 TO SAINT PATRICK'S DRIVE**

| Access Point | Median Opening | Distance Between Openings    | Station or Location | Comment   |
|--------------|----------------|------------------------------|---------------------|---|
| A            | No             | -                            | 12+40               | Parcel 159 & 158 (S)  |
| B            | No             | -                            | 12+50               | Parcel 177 (N)  |
| D            | Yes            | 525                          | 16+00               | Parcel 147 (N)<br>Channelized opening to North only           |
| E            | No             | -                            | 16+80               | Parcel 173, Block D, Lots 1&2 (S)                             |
| F            | Yes            | 375                          | 19+75               | Gateway Boulevard (Waldorf Manor Subdivision - 28 Lots)       |
| G            | Yes            | 450<br>(Same opening as "F") | 20+50               | Parcel 94, Lots 1 & 2 (N)<br>County Well Station + Vacant Lot |
| H            | No             | -                            | 22+15               | Parcel 173, Block C, Lots 1 & 2 (S)                           |
| I            | No             | -                            | 23+80               | Parcel 173, Block A, Lots 1&2 (S)                             |
| J            | No             | -                            | 24+95               | Parcel 63 (N)   |
| K            | No             | -                            | 26+15               | Parcel 173, Block A, Lots 3&4 (S)                             |
| L            | No             | -                            | 26+20               | Warner Avenue Right-of-Way<br>Access to Parcel 15 (N)         |
| M            | Yes            | 750                          | 28+00               | Park Avenue (S)<br>& Parcel 15 & 16 (N)                       |
| N            | No             | -                            | 29+30               | Parcel 173, Block B, Lots 3&4 (S)                             |
| O            | No             | -                            | 31+00               | Parcel 173, Block B, Lot 2 (S)                                |
| P            | No             | -                            | 32+00               | Parcel 173, Block B, Lots 1&5 (S)                             |
| R            | No             | -                            | 35+38               | Parcel 65, 84 & 227 (S)                                       |
| S            | No             | -                            | 38+10               | Parcel 59 (S)   |
| T            | Yes            | 1,750                        | 46+50               | Sundance Drive & Parcel 139                                   |
| U            | No             | -                            | 54+60               | Southwinds Drive (S)  |
| V            | No             | -                            | 55+85               | Parcel 60 (S)   |
| W*           | Yes            | 1,115                        | 57+65               | St. Patrick's Drive   |

Note: Access Points "C" & "Q" were removed/consolidated during the Access Management Planning Process

(N) = North Side Access Only

(S) = South Side Access Only

\*Access Point "W" amended per Variance Request on 10/31/06. Per the property owner's request, Access Point "W" was modified to delete access to Parcel 139. New Access Points were approved per the Charles County Commissioners at the 10/31/06 Work Session. See Table F.5, Access Points B1& B2.

*Adopted: 1/06/04; Amended: 10/31/06*

**TABLE F.5      CROSS COUNTY CONNECTOR - SAINT PATRICK'S DRIVE TO  
MIDDLETOWN ROAD**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment  |
|--------------|----------------|---------------------------|---------------------|--|
| A            | No             | -                         | 60+60               | TM 14, Pcl. 205 (N)  |
| B1           | No             | -                         | 65+15               | TM 14, Pcl. 193 (S)***                                       |
| B2           | No             | -                         | 72+65               | TM 14, Pcl. 193 (S)***                                       |
| C            | No             | -                         | 74+77               | Opals Place, future access for TM 14, Pcl. 172, Pcl. 220 (N) |
| D            |                | -                         | 80+73.5             | Willet Place (N)   |
| E            | Yes            | 2,675.9*                  | 84+40.9             | Silent Creek Road (N), TM 14, Pcl. 282 & Pcl. 23 (S)         |
| F            | Yes            | 1,153.6                   | 95+94.5             | Worthington Street (N), TM 14, Pcl. 22 & Pcl. 179 (S)        |
| G            | No             | -                         | 103+65              | Curtin Drive, TM 14, Pcl. 167, Pcl. 166, & Pcl. 165 (N)**    |
| H            | Yes            | 1,405.5                   | 110+00              | TM 14, Pcl. 4 (N), Pcl. 282 (S)                              |
| H2           | No             | -                         | 120+74              | TM 14, Parcel 336 (N)****                                    |
| I            | No             | -                         | 124+00              | TM 14, Pcl. 89 & Pcl. 44 (S)                                 |

Notes: (N) = Access Point is on the *North* side of the road for the subject parcel of land.

(S) = Access Point is on the *South* side of the road for the subject parcel of land.

\*Distance from St. Patrick's Drive (previous median break).

\*\*Access Point "G" amended per Variance Request on 5/24/04

\*\*\*Access Point "B" amended per Variance Request on 10/31/06. Per the property owners request, Access Point "B" and access to the Cross County Connector at Saint Patrick's Drive was deleted for Parcel 139 on 10/31/06. Access Points "B1" & "B2" were added to Table F.5 to provide access for Parcel 139, per the Charles County Commissioners' Work Session on 10/31/06.

\*\*\*\*Access Point "H2" added per resolution on 2/3/09.

**Adopted: 1/06/04**

**Amended: 5/24/04, 10/31/06, 2/3/09**

**TABLE F.6     CROSS COUNTY CONNECTOR - MIDDLETOWN ROAD TO MD 229**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment                        |
|--------------|----------------|---------------------------|---------------------|--------------------------------|
| A            | Yes            | -                         | 130+90              | Middletown Road (New Location) |
| B1           | No             | -                         | 147+50              | P 55 & P 72 (W)                |
| B2           | No             | -                         | 148+30              | P 113 (E)                      |
| C            | Yes            | 2,920                     | 160+10              | P 208 & P 71                   |
| D            | Yes            | 1,590                     | 176+00              | P 25 *                         |
| E            | No             | -                         | 193+00              | P 68 (S)                       |
| F            | Yes            | 3,300                     | 209+00              | P 98 (S) - "T" Intersection    |
| G            | Yes            | 1,800                     | 227+00              | P 98 (Second Entrance)         |
| H            | Yes            | 1,750                     | 244+50              | P 176                          |
| I            | Yes            | 2,080                     | 265+30              | Bensville Road (MD 229)        |

Notes: (E) = Access for the East side of the roadway only

(W) = Access for the West side of the roadway only

(S) = Access for the South side of the roadway only

\* Potential Future Location of Mill Hill Road Extension - subject to change upon study and design results

*Adopted: 1/06/04*

*Amended: 1/25/05*

**TABLE F.7     CROSS COUNTY CONNECTOR - MD 229 TO PRINCE EDWARD DRIVE**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment                             |
|--------------|----------------|---------------------------|---------------------|-------------------------------------|
| A            | Y              | 2,080*                    | 265+30              | Bensville Road (MD 229)             |
| B            | N              | -                         | 273+53              | Parsons Green Drive (N)**           |
| C            | Y              | 1,320                     | 278+50              | TM 13, P 10<br>“T” Intersection (S) |
| D            | N              | -                         | 287+68              | TM 13, P 215 (S)                    |
| E            | N              | -                         | 287+68              | TM 13, P 219 (N)                    |
| F            | Y              | 1,668                     | 295+18              | Highgrove Drive                     |
| G            | Y              | 2,939                     | 324+57              | Kingsway Drive                      |
| H            | N              | -                         | 334+50              | TM 13, P 18 (S)                     |

Notes: (N) = Access for the North side of the roadway only

(S) = Access for the South side of the roadway only

TM = Tax Map Reference

P = Parcel Reference

\*Distance from nearest median break to the east at Station 244+50.

\*\*Access to Tax Map 13, Parcel 77 & Parcel 9 must connect to Parsons Green Drive to access the Cross County Connector at Station 273+53.

*Adopted: 10/18/05*



**TABLE F.8 CROSS COUNTY CONNECTOR - PRINCE EDWARD DRIVE TO MD 210**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment  |
|--------------|----------------|---------------------------|---------------------|--|
| A            | Y              | 2,331*                    | 347+88              | Prince Edward Drive & Service Road serving: TM 13, P 88, Lots 8, 9, & 10, & P 52 (CAP)     |
| B            | N              | -                         | 355+60              | TM 13, P 88, Lots 11, 12, 13, & 14 (CAP)   |
| C            | Y              | 1,452                     | 362+40              | TM 13, P 88, Lots 15 & 16 (S) (CAP)  |
| D            | N              | -                         | 389+05              | TM 5/13, P 156 Trail Shelter (N)   |
| E            | N              | -                         | 389+05              | TM 5, P 51 (S)   |
| F            | Y              | 3,985                     | 402+25              | TM 13, P 156 (N) & P 123, P 49, P 73, P 48 (S) (CAP)                                       |
| G            | N              | -                         | 407+50              | Catchpenny Pl. - TM 13, P 107, P 70, P 96, P 102- Lots 1&2, P16, P 92, P 95, P 47(S) (CAP) |
| H            | Y              | 1,834                     | 420+59              | Billingsley Rd & TM 13, P 156  |
| I            | N              | -                         | 428+09              | TM 5, P 175 (N)  |
| J            | N              | -                         | 428+09              | TM 5, P 175 (S)  |
| K            | Y              | 1,476                     | 435+35              | TM 5, P 441, P 345, P 346 (N) & P 426, P 251, P250 (S) (CAP)                               |
| L            | N              | -                         | 442+87**            | TM 5, P 424 (S)  |
| M            | Y              | 1,502                     | 450+37              | MD 210   |

Notes: (N) = Access for the North side of the roadway only

(S) = Access for the South side of the roadway only

TM = Tax Map Reference

P = Parcel Reference

(CAP) = Consolidated Access Point - Multiple properties will be required to consolidate access locations upon re-development

\*Distance from nearest median break to the east at Station 324+57.

\*\*Tax Map 5, Parcel 241 must access Point "L" to access the Cross County Connector at Station 442+87

*Adopted: 10/18/05*

*Amended: 3/13/07*

**TABLE F.9 MIDDLETOWN ROAD - MD 228 TO BILLINGSLEY ROAD**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment   |
|--------------|----------------|---------------------------|---------------------|---|
| A            | Yes            | N/A                       | 165+00              | MD 228  |
| B            | Yes            | 1,450                     | 150+50              | McDaniel Road Spur  |
| C            | No             | -                         | 140+00              | TM 7, P 232 (W)/(E)   |
| D            | No             | -                         | 127+83              | TM 7, P 126, P 70, P 163, P 378, P 333, P 337, P 222 (E) - (CAP)                  |
| E            | Yes            | 3,157                     | 118+93              | Sedgewick Dr. - Charles Crossing  |
| F            | No             | -                         | 115+30              | TM 7, P 174* & P 44 (W) - (CAP)   |
| G            | No             | -                         | 114+00              | TM 7, P 377 - Lot A, B, & C, P 228, P 162, P 160 (E) - (CAP)                      |
| H            | No             | -                         | 113+00              | TM 7, P 317, Lots 1,2, & 3 (W) - (CAP)  |
| I            | No             | -                         | 110+70              | TM 7, P 328 & P 193 (E) - (CAP)   |
| J            | No             | -                         | 108+15              | TM 7, P 371, P 372, P 362, P 98 (E)(CAP)  |
| K            | Yes            | 1,235                     | 106+58              | Lexington Drive - North Point High School Access                                  |
| L            | No             | -                         | 105+10              | TM 7, P 21* (W)   |
| M            | No             | -                         | 102+09              | TM 7, P 18 (W)  |
| N            | No             | -                         | 100+78              | TM 7, P 292 & P 77 (E) - (CAP)  |
| O            | No             | -                         | 97+60               | TM 7, P 77, P 179, P 161, P 83, P 192, P 395 - Lot 6, P 80, P 74 - Lot 1 (E)(CAP) |
| P            | No             | -                         | 96+95               | TM 7, P 270 & 271 (W) - (CAP)   |
| Q            | No             | -                         | 90+98               | TM 7, P 118 (W) - Windsor Mill Subdiv.  |
| R            | No             | -                         | 87+50               | TM 7, P 122, P 194 (E) - (CAP)  |
| S            | No             | -                         | 84+30               | TM 7, P 183, P 370, p/o P 122* (W)(CAP)   |
| T            | Yes            | 2,628                     | 80+30               | Charles Crossing Subdiv. (TM 7, P 411) & Avalon Subdiv. (TM 7, P 69 & P 298)      |
| U            | No             | -                         | 70+75               | TM 7, P 364 (E)-Lighthouse Bap. Church  |
| V            | No             | -                         | 71+41**             | Middletown South Subdivision (TM 14, P 81) (W) **                                 |
| W            | No             | -                         | 63+35               | TM 14, P 121*, P 79* (W) - (CAP)  |
| X            | Yes            | 1,780                     | 62+50               | TM 14, P 281 -Westlake H.S. (North Exit) - Channelized Left-out only & Right-out  |

**TABLE F.9 MIDDLETOWN ROAD - MD 228 TO BILLINGSLEY ROAD (CONTINUED)**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment  |
|--------------|----------------|---------------------------|---------------------|--|
| Y            | No             | -                         | 60+00               | TM 14, P 76 (W) - (CAP)  |
| Z            | Yes            | 680                       | 55+70               | TM 14, P 281* (E)- Westlake H.S. (Main Entrance) - Channelized Left-in/Channelized Left-out & Right-in/Right-out turns |
| Z2           | No             |                           | 51+00               | TM 14, P 264 (E) Right-in Only w/Aux. Deceleration Lane ***  |
| AA           | No             | -                         | 55+70               | TM 14, P 75 (W)  |
| BB           | No             | -                         | 51+90               | TM 14, P 47 & TM 14, P 70* (W) - (CAP)   |
| CC           | Yes            | 820                       | 47+50               | Smallwood Drive & TM 14, P 85, P 2, P 208, P 210 - (CAP)   |
| DD           | No             | -                         | 42+50               | TM 14, P 273 (W)   |
| EE           | No             | -                         | 36+00               | TM 14, P 332 (E)   |
| FF           | Yes            | 2,060                     | 26+90               | TM 14, P 3 & P 69 & 74 - (CAP)   |
| FF2          | No             | -                         | 20+62               | TM 14, Parcel 336 (E)****  |
| GG           | No             | -                         | 17+00               | TM 14, P 44 (E)  |
| HH           | No             | -                         | 15+50               | TM 14, P 107, 105, 108, 146, 113, 55, 72, & 208 (W) - (CAP)  |
| II           | Yes            | 1,570                     | 11+20               | Cross County Connector   |
| JJ           | No             | -                         | 209+90              | TM 14, P 66 (W)  |
| KK           | No             | -                         | 207+00              | TM 14, P 192 (E)   |
| LL           | Yes            | 1,210                     | 203+60              | Billingsley Road   |

Notes: (E) = Access Point on east side of roadway

(W) = Access Point on west side of roadway

(CAP) = Consolidated Access Point - Multiple properties will be required to consolidate access locations upon re-development

\*County Owned Property (as of 12/31/03)

\*\*Access Point "V" amended per Variance Request on 11/16/04

\*\*\*Access Point "Z2" added per resolution on 6/17/08

\*\*\*\*Access Point "FF2" added per resolution on 2/3/09

**Adopted: 3/08/04**

**Amended: 11/16/04, 6/17/08, 2/3/09**

**TABLE F.10 ROSEWICK ROAD - US 301 TO ST. CHARLES PARKWAY**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment  |
|--------------|----------------|---------------------------|---------------------|--|
| A            | Yes            | 0                         | 384+60              | Intersection w/ US 301                               |
| B1           | Yes            | 1,110                     | 373+50              | TM 33, Parcel 2                                      |
| B2           | No             | -                         | 368+29              | Right-Out Only for TM 33, Parcel 2 (N)*              |
| C            | Yes            | 1,125                     | 362+25              | Intersection w/ Washington Ave.                      |
| D            | Yes            | 1,238                     | 349+87              | TM 33, P 3; TM 23, P 40                              |
| E            | No             | -                         | 345+20              | TM 33, Parcel 493                                    |
| F            | No             | -                         | 331+00              | TM 33, Parcel 43 (N)                                 |
| G            | No             | -                         | 331+00              | TM 33, Parcel 43 (S)                                 |
| H            | Yes            | 2,687                     | 322+10              | TM 33, Parcel 43**                                   |
| I            | No             | -                         | 310+50              | TM 33, Parcel 43 (N)                                 |
| J            | Yes            | 2,190                     | 301+10              | TM 33, Parcel 43                                     |
| K            | No             | -                         | 293+60              | TM 23/33, Parcel 314 (S)                             |
| L            | No             | -                         | 293+60              | TM 23/33, P 314 & P 43 (N)                           |
| M            | No             | -                         | 286+10              | TM 23, Parcel 314 (N)                                |
| N            | No             | -                         | 286+10              | TM 33, Parcel 497, Lots 1-4, & TM 23, Parcel 376 (S) |
| O            | Yes            | 2,480                     | 276+30              | Intersection w/Radio Station Road                    |
| P            | No             | -                         | 268+45              | TM 23, Parcel 234 (S)                                |

Notes: (N) = Access for the North side of the roadway only

(S) = Access for the South side of the roadway only

\*Access Point "B2" added per Variance Request on 5/08/07

\*\*Access Point "H" relocated per DRRA (L.6655 F.647, recorded 6-20-08)

*Adopted: 3/22/04*

*Amended: 1/11/05, 5/08/07, 6/20/08*

**TABLE F.11 ST. CHARLES PARKWAY - BILLINGSLEY ROAD TO ROSEWICK ROAD**

| Access Point | Median Opening | Distance Between Openings | Station or Location | Comment   |
|--------------|----------------|---------------------------|---------------------|---|
| A            | Y              | -                         | 117+52              | Billingsley Rd. Intersection  |
| B            | N              | -                         | 120+87              | Middle Business Park, Section D-14 (W)  |
| C            | Y              | 1,368                     | 131+20              | DeMarr Road (Relocated)   |
| D            | Y              | 1,757                     | 148+77              | Existing DeMarr Road/Future St. Edwins Dr. (E) & White Plains Regional Park (W) |
| E            | Y              | 2,135                     | 170+12              | DeMarr Driveway & Gleneagles, Section DD  |
| F            | Y              | 1,348                     | 183+60              | Gleneagles, Section DD2 (E)   |
| G            | Y              | 1,403                     | 197+63              | Gleneagles Annex 2; TM 15, P 149; TM 24, P 1                                    |
| H            | Y              | 1,631                     | 213+94              | Wooded Glen, Sections 3-2 & 4-2; TM 15, P 149; TM 24, P 1                       |
| I            | Y              | 2,816                     | 242+10              | Wooded Glen, Section 5-1; TM 15, P 149; TM 24, P 1; TM 23, P 266                |
| J            | Y              | 1,695                     | 259+05              | Wooded Glen, Section 5-2; TM 15, P 149; TM 24, P 1; TM 23, P 266                |
| Reference*   | Y              | 1,725                     | 276+30              | Rosewick Rd. & Radio Station Rd. Intersection                                   |

Notes: (E) = Access for the East side of the roadway only

(W) = Access for the West side of the roadway only

Reference\* = This point is a reference point for the measure of distance only and not a managed access point for the St. Charles Parkway Access Management Plan. See the Rosewick Road Access Management Plan for access point details for the Radio Station Road intersection.

*Adopted: 1/11/05*

**TABLE F.12 WESTERN PARKWAY - MD 228 TO MATTAWOMAN DRIVE**

| Access Point   | Median Opening | Distance Between Openings | Station or Location | Comment   |
|----------------|----------------|---------------------------|---------------------|---|
| A              | Y              | -                         | 0+00                | MD 228  |
| B              | N              | -                         | 3+90                | TM 8, P 517 southbound Right-in only (W)                                |
| C              | N              | -                         | 5+52                | TM 8, P 43 northbound Right-in only (E)                                 |
| D              | Y              | 970                       | 9+70                | TM 8, P 43  |
| E              | Y              | 952                       | 19+22               | Hamilton Road*  |
| F              | N              | -                         | 28+00               | TM 8, P 441 (W)   |
| G              | N              | -                         | 28+00               | TM 8, P 48 (E)  |
| H              | Y              | 1,918                     | 38+40               | TM 8, P 328   |
| I              | Y              | 1,917                     | 57+57               | Westdale Drive  |
| J              | N              | -                         | 64+82               | Westlawn Way (E)  |
| J1             | N              | -                         | 67+00               | Acton Park Place (W)**  |
| K              | Y              | 1,455                     | 72+12               | Acton Lane  |
| <b>Phase 2</b> |                |                           |                     |   |
| K              | Y              | 1,455                     | 60+00               | Acton Lane  |
| L              | N              | -                         | 65+22               | Tanglewood Drive (W)  |
| M              | N              | -                         | 65+32               | Homestead Lane (E)  |
| N              | N              | -                         | 69+10               | Hadley Drive (W)  |
| O              | Y              | 1,643                     | 76+43               | Holly Tree Lane   |
| P              | Y              | 742                       | 83+85               | Jefferson Farm Lane (Channelized Left in from southbound Western Pkwy.) |
| Q              | N              | -                         | 83+85               | Eden Woods Court (W)  |
| R              | Y              | 1,560                     | 99+45               | Pierce Road   |
| <b>Phase 3</b> |                |                           |                     |   |
| R              | Y              | 1,560                     | 99+45               | Pierce Road   |
| R2             | N              |                           | 114+75              | TM 8, P. 373 (E)***   |
| S              | Y              | 2,280                     | 122+25              | TM 8, P. 16   |
| T              | N              | -                         | 134+40              | TM 8, P. 26 (W)   |
| U              | Y              | 2,018                     | 146+04              | US 301(Crain Highway)   |

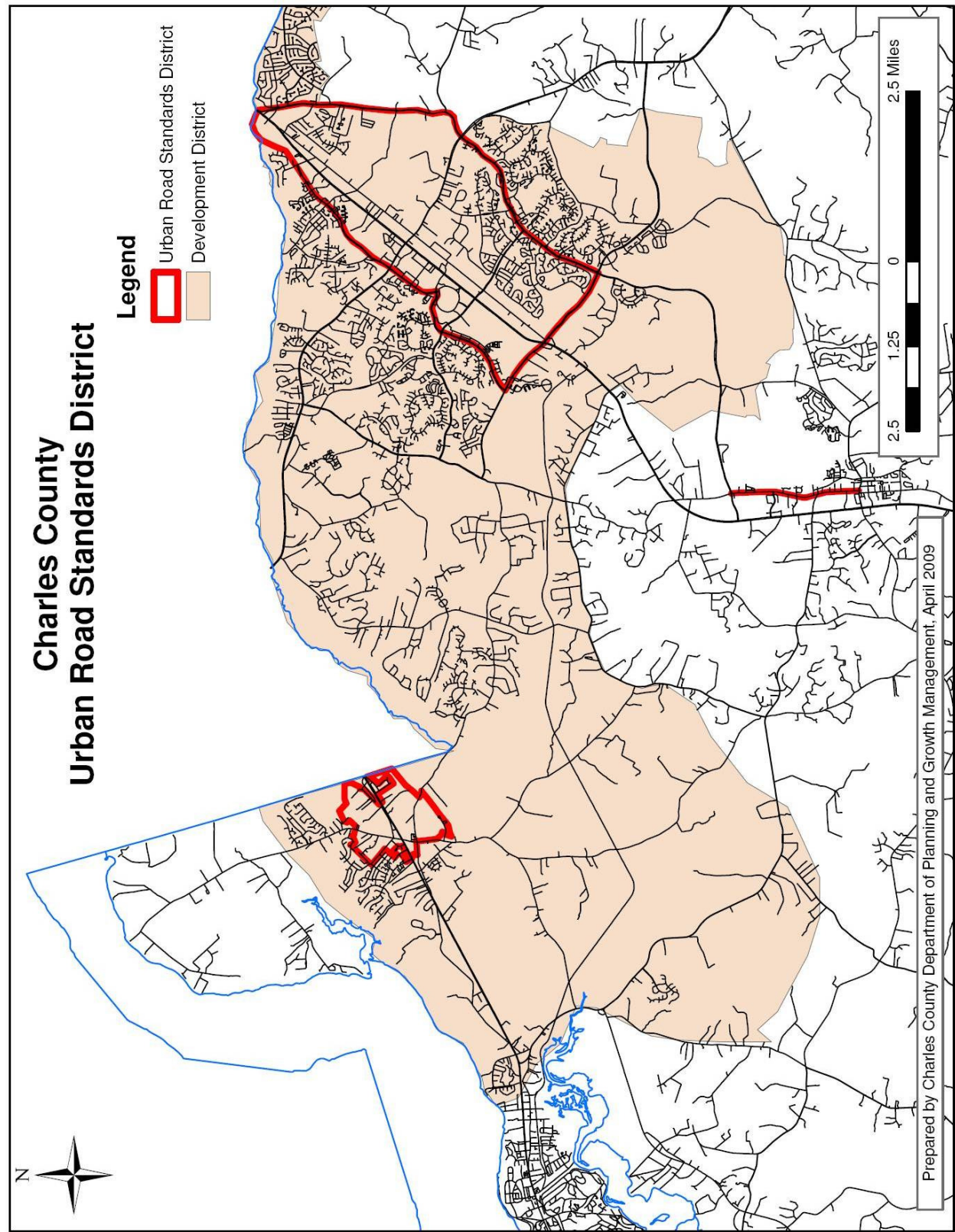
Notes: (E) = Access for the East side of the roadway only (W) = Access for the West side of the roadway only

\*TM 8, P 520 - This property must access Hamilton Road

\*\*Access Point "J1" added per Variance Request on 12/12/07

\*\*\*Access Point "R2" added per resolution on 6/17/08

Adopted: 12/14/04; Amended: 8/01/06, 12/12/07, 6/17/08

**APPENDIX G****URBAN ROAD STANDARDS DISTRICT**

**APPENDIX "H"****REFERENCES**

1. "A Policy on Geometric Design of Highways and Streets", 1990- AASHTO
2. "Maryland State Highway Access Manual," Maryland Department of Transportation, Engineering Access Permits Division of the State Highway Administration
3. "Standard Specifications for Construction and Materials," Maryland Department of Transportation, State Highway Administration
4. "Manual on Uniform Traffic Control Devices for Streets and Highways," U.S. Department of Transportation, Federal Highway Administration
5. "Guide for the Development of Bicycle Facilities" - AASHTO
6. Charles County Standard Specifications for Construction Manual
7. Charles County Standard Detail Manual
8. National Cooperative Highway Research Program (NCHRP) Report 348: Access Management Guidelines for Activity Centers
9. "Roadside Design Guide" (2006 or most recent) - AASHTO